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GOLD STOCKS ARE "DEFENSIVE"
FACT OR FICTION

By

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B.S., University of Nebraska, 1969

Presented in partial fulfillment of the requirements for the degree of

Master of Business Administration

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1974

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CHAPTER I

INTRODUCTION

Purpose of the Study

The primary objective of this study was to determine if a select group of gold stocks (ASA, Ltd., Homestake, Dome Mines, and Lake Shore Mines) are defensive. The issue examined was the relationship between gold stocks and inflation as measured by popular stock indexes. The period covered by the study was January 1950 through October 1973.

Analysis of the Problem

Today the average U.S. citizen considers the state of the U.S. economy and inflation to be one of the major problems in America. According to Business Week some of the central areas of concern are whether or not the factories will have enough energy to stay in operation and if the factories do stay in operation, but at a decreased capacity, how many employees will be laid off--temporarily or permanently.[1] Inflation has recently been climbing at an alarming rate. In 1973 the wholesale price index increased 18.2 per cent.[2] The Dow Jones Futures Index on 31 December 1973 was

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[1]"How the Energy Crisis Will Hit Industry," Business Week, 24 November 1973, pp. 56-62.

[2]"Wholesale Prices Increased Sharply Again Last Month," The Wall Street Journal, 9 January 1974, p. 3.

320.50 compared to 184.58 on the same date in 1972.[3] Investors have watched the Dow Jones Industrial Average collapse from a peak of 1051.51 in January 1973 to a low of 817.73 in November 1973. On November 26, 1973 the DJIA was down 29.05 points, the steepest drop in eleven years. Only 149 issues advanced and 1,518 declined. The headline of the 'Abreast of the Market' column of the Wall Street Journal, November 27, 1973 states: "Industrials Skid 29.05, Steepest Drop in 11 Years; Action is Termed 'Panic' Over Energy Crisis."

Problems like this face the investor today. How can the investor protect his capital--perhaps one answer is with an investment in gold stocks. Are gold stocks a defense against such general economic conditions? To analyze this problem, one needs first to look at general economic conditions as they currently exist and as they have changed over the past forty years.

Energy Chief William E. Simon, in several interviews, has stated that the energy crisis is very real, and will be a major concern for at least the next five to ten years. The energy crisis came to a head when the Arab nations instituted a boycott of oil shipments to the U.S. and a reduction of oil shipments to Europe and Japan. The boycott will not effect the U.S. as severely as it will Europe and Japan for the U.S. imports only 10 to 20 per cent of its oil while most

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[3]"Commodity Indexes," The Wall Street Journal, 2 January 1974, p. 14.

European countries import approximately 50 per cent of their oil from the Arab states. Japan imports approximately 80 per cent of its energy needs from the Middle East.

Even though the boycott is but several months old, it is having a large impact on the everyday lives of Americans. Fuel oil for business is being cut, gasoline is in short supply, and homes throughout the nation are expected to be cooler during the winter of 1973-1974. Airlines are laying off employees by the thousands and the plastics industry is projecting a possible layoff of 1.6 million workers in 1974.[4] The major auto manufacturers are closing plants for weeks at a time. The President has banned the sale of gasoline on Sundays. The energy situation is very new and new reports are coming out of Washington, D.C. daily. It is almost impossible to keep abreast of the situation. It is not the intent of this study to analyze the energy crisis. Suffice it to say that the energy crisis has had, to this point, a very devastating effect on current market conditions, the economy, business in general and investor psychology.

The next concern of the investor is that of inflation. Inflation is very high in the U.S. today. Table 1-1 compares the rate of inflation in eight selected commodities from 1934 to 1971, 1934 to 1973, and 1971 to 1973. The increase in prices for the commodities is high but how does

---

[4]"Energy Crisis: Where Shutdowns and Cutbacks Will Hurt Labor," Business Week, 24 November 1973, p. 60.

it translate into products? In a book about to be published, Economics for the Layman by Vern Hughes, a very interesting comparison, summarized in Table 1-2 is made. As can be seen from the chart, the increase in prices average over 600 per cent. In addition, the 1973 prices used are relatively low compared to current prices.

Another method of measuring increases in prices is the Consumer Price Index. Table 1-3 shows the increase in the Consumer Price Index from 1934-1973.

By examining Table 1-1, Table 1-2, and Table 1-3 it is not difficult to determine that inflation is very definitely with us. The price increases in Table 1-1 are very substantial. From 1934 to August 1973 the price of cocoa has increased 1620 per cent. The average price increase of the eight commodities from 1934 to September 1973 is 1078.11 per cent. The average price increase of the eight commodities from 1971 to September 1973 is 183.55 per cent with most of the increase coming in the last ten months.

Several investment advisors think this may be the start of hyperinflation.

> During a hyperinflation, prices actually explode upward, causing massive economic disruptions. Probably the most famous recent example of hyperinflation was post WWI Germany.[5]

Table 1-4 shows specifically what happened to the German Mark following World War I.

---

[5]Bernard Nagengast, "Hyperinflation - How to Come Out Ahead," The Forecaster (Tarzana, Calif.: Forecaster Publishing Co., Inc.), 29 August 1973.

TABLE 1-1

TYPICAL COMMODITY PRICES 1934 - 1973

Commodity	1934 Value*	1971 Value*	% Increase 1934-1971	1973 Value	Year High 1973 Date	% Increase 1934-1973	% Increase 1971-1973
Corn	$0.25/bu	$1.25/bu	400	$ 3.44/bu	Aug 17	1276	175.2
Wheat	.50/bu	1.50/bu	200	5.48/bu	Aug 24	996	265.3
Cotton	.10/lb	.30/lb	200	.875/lb	Sep 1	775	191.7
Sugar	.01/lb	.08/lb	700	.102/lb	May 28	920	27.5
Cocoa	.05/lb	.25/lb	400	.86/lb	Jul 23	1620	224.0
Wool	.20/lb	.60/lb	200	3.01/lb	Mar 23	1405	401.7
Silver	.50/oz	1.50/oz	200	3.18/oz	Jul 23	536	112.0
Copper	.08/lb	.56/lb	600	.957/lb	Aug 11	1096.9	71.0
Average of Above Eight Commodities			362.5			1078.11	183.55
Gold	$35/oz	$42/oz**	20	$127.50/oz**	Jul 6	264.3	203.6

SOURCE: Information in Columns 2, 3 and 4 are contained in Donald J. Hoppe, How to Invest in Gold Stocks and Avoid the Pitfalls, (New Rochelle, N.Y.: Arlington House, 1972), Fig. 12, p. 145. Information in Columns 5 and 6 are from D. A. Davidson and Co., Great Falls, Montana.

*Prices rounded off to nearest cent. **London Market Price

TABLE 1-2

TYPICAL PRICE INCREASE IN CONSUMER PRODUCTS 1934-1973

Commodity, Product or Service	1934 Price	Factor	1973 Price
Loaf of Bread (Standard)	$ .10	5	$ .50
Quart of Milk	.10	4	.40
Men's Work Shoes (Penney's Best)	2.98	4+	12.98
Pound of Hamburger (1934 - 3 lbs/$.25)	.10	8	.79
Deluxe Chevrolet Sedan (Full-Size)	820.00	5	4000.00
Thousand Feet of Lumber (At the Yard)	25.00	10	250.00
Regular Letter Postage	.02	5	.10
Hourly Rate Day Laborer (RR Section)	.25	6	1.50
Slick-Paper Magazines	.10	6	.60
Movie Ticket	.25	8	2.00
Haircut (Men)	.25	8	2.00
Gallon of Regular Gas	.16	3 6+	.48

SOURCE: Vern Hughes, Economics for the Layman, cited by Vern Myers, Myers Finance and Energy (Calgary, Alberta, Canada: Vern Myers), 22 November 1973, p. 4.

TABLE 1-3

CONSUMER PRICE INDEX
1947-1949 = 100

Year	All Items	Year	All Items	Year	All Items
1934	57.2	1948	102.8	1962	129.2
1935	58.7	1949	101.8	1963	130.8
1936	59.3	1950	102.8	1964	132.5
1937	61.4	1951	111.0	1965	134.8
1938	60.3	1952	113.5	1966	138.7
1939	59.4	1953	114.4	1967	142.7
1940	59.9	1954	114.8	1968	148.7
1941	62.9	1955	114.5	1969	156.7
1942	69.7	1956	116.2	1970	166.0
1943	74.0	1957	120.2	1971	172.6
1944	75.2	1958	123.5	1972	181.2
1945	76.9	1959	124.6	1973	189.5
1946	83.4	1960	126.5		
1947	95.5	1961	127.8		

SOURCE: See U.S. Department of Commerce, Business Statistics, 1957 Biennial Edition (Washington D.C.: Government Printing Office, 1957), p. 26; U.S., Department of Commerce, 1973 Business Statistics, 19th Biennial Edition (Washington, D.C.: Government Printing Office, 1973), p. 40. "Selection and Opinion," Value Line (New York: Arnold Bernhard and Company, Inc.), 12 April 1974.

TABLE 1-4

INFLATION OF THE GERMAN MARK
1914-1923

Date	Exchange Value of Mark*	
31 July 1914	4.2M	= $1.00
31 December 1918	8.4	
31 December 1919	28	
31 December 1920	74	
31 December 1921	162	
31 December 1922	7,000	
31 July 1923	160,000	
1 October 1923	242,000,000	
20 November 1923**	4,200,000,000,000	

SOURCE: Hoppe, How to Invest in Gold Stocks, p. 63.

*Per U.S. Dollar, based on official quotations: black market rates were considerably higher after 1920.

**Last official quotation for old mark; conversion rate establishes 30 November 1923 at one trillion-to-one with new Reichsmarks:

1,000,000,000,000 M = 1 RM
4.2 RM = $1.00

Mr. Bernard Nagengast (see Appendix A) has presented an excellent outline of the theory of hyperinflation. The understanding of hyperinflation is critical to understanding why gold stocks are recommended by many investment services as a hedge against inflation. Many analysts and investors feel that the U.S. is now in the second stage of hyperinflation.

Historically, gold has had many uses and commanded a great deal of power. In fact the historians Gibbon and Mommsen cite the loss of gold and a chronic debasement of its currency as being among the chief causes of the collapse of the Roman Empire.[6] What are the properties of this soft, yellow metal that could partially cause the fall of the Roman Empire and yet be called by John Maynard Keynes, "this barbarous relic."[7]

> Its greatest strength is its indestructibility. Unlike silver it does not tarnish and it is not corroded by acid--except by a mixture of nitric and hydrochloric acid. Gold coins have been recovered from sunken treasure ships after two centuries beneath the sea, looking as bright as new. . . . The first appeal of gold was strictly aesthetic. Soon its beauty and versatility recommended it above all other metals. It was almost as soft as putty, so malleable that it could be hammered cold by even a primitive goldsmith until it was a thin translucent wafer only five-millionths of an inch thick. One ounce of gold can be beaten into a sheet covering 100 square feet. It is so ductile that one ounce can be drawn into fifty miles of thin gold

---

[6]Hoppe, How to Invest in Gold Stocks, p. 24.

[7]Timothy Green, The World of Gold (New York: Simon and Schuster, 1970), p. 18.

> wire or plate a thread of copper or silver wire 1,000 miles long. . . . It is such an excellent conductor of electricity that a microscopic circuit of liquid gold 'printed' on a strip of plastic can replace miles of wiring in a computer. . . . Yet in volume it is so dense that all the 70,000 tons mined between 1492, when Columbus discovered America, and the end of 1967 could be contained in a vault measuring only 54 feet on each side.[8]

These are the physical properties of gold. However, gold has another property that may be more important--that of being used as a medium of exchange and a store of wealth. Broadly speaking, money can be anything that is generally agreed upon to be an acceptable medium of exchange. The only commodity that has ever acquired a universal acceptance as money has been gold.[9] King Gyges of Lydia (in Asia Minor) established the world's first mint about 700 B.C. making coins that were 75 per cent gold and 25 per cent silver. The first pure gold coins were struck by another Lydian monarch, Croesus (560 - 546 B.C.).[10] Since this historic coinage in Lydia, all major civilizations or countries with world power or dominance have used some form of gold coinage or a gold backed currency at some time in their period of dominance as a means of facilitating trade and commerce within, and outside of, the country's or the empire's sphere of influence. Because gold was used in coinage it was greatly

---

[8]Ibid., p. 19.

[9]Hoppe, How to Invest in Gold Stocks, p. 27.

[10]Ibid., p. 31.

sought after by individuals for personal wealth and by governments for power. Can both objectives be fulfilled--or are they mutually exclusive? Mr. Donald J. Hoppe gives an example of how government action toward gold can help individuals attain personal wealth.[11]

> As an example, let us take the case of Campbell Red Lake Mines (ticker symbol CRK), one of the senior golds listed on the New York Stock Exchange. During the peak of the March 1968 crisis, the price of gold on the London market reached $44 per ounce. From December of 1966 to March 1968, CRK rose from its previous low of $16 per share to a high of $47 per share, a capital gain of 160 per cent. But following the crisis high, the London gold price was, as we noted, forced back to par ($35) and it reached that level in December of 1969. During this identical period, CRK fell from its all-time high of $47 per share to a low of $15, reached also in December of 1969, for a loss of 68 per cent. However, as soon as the IMF-South African accord was approved, the London market began a slow but persistent rise, and the price of bullion crossed $41 per ounce in May of 1971. During this identical time, CRK moved from its $15 low to a May 1971 high of $35 per share--a gain of 133 per cent.
>
> I have used CRK as a typical example, but Homestake, Dome Mines and American-South African, among the listed golds, made moves of equivalent scope and duration.[12]

This is a basic background for the situation the investor finds himself in today in respect to gold and gold stocks. Many investment service letters today are recommending the purchase of gold stocks for two basic reasons: (1) as a hedge against inflation and (2) for capital preservation

---

[11]For a complete discussion of the history of gold coinage see Donald J. Hoppe, How to Invest in Gold Stocks and Avoid the Pitfalls, pp. 23-99.

[12]Ibid., p. 207.

and capital gains as a defensive stock in a declining market.[13] According to various letters (some listed below) the two reasons for owning gold stocks now are intertwined. Editors of several letters feel that the increas in money supply must be slowed down by the government.

> The total amount of coins and paper money in this country for every man, woman and child was $322.08 per person as of June 30, 1973, and this estimated amount is growing. That compares with only $296.84 just a year earlier. In the mid-1960s the total per person was $177.47.[14]

The slow down in inflation would reduce the amount of money in circulation causing tight money, fewer loans, less disposable income, and therefore a general decrease in business activity with decreased profits, and a general depression. During a depression the gold stocks should react as a defensive stock, characterized by Cohen and Zinbarg as:

> Stocks which are regarded as stable and relatively safe, especially in a period of declining business activity. In a period of economic weakness these

---

[13]Some of the investment services are: Dow Theory Letters, Inc., Richard Russell, P.O. Box 1759, La Jolla, Calif. 92037; Schaefer's "Current Market Opinions," The Dow Theory Trader," E. George Schaefer, 910-916 East 38th Street, Indianapolis, Indiana 46205; Baxter, Bill Baxter, 51 Weaver Street, Greenwich, Conn. 06830; The Powell Monetary Analyst, Reserve Research Ltd., 63 Wall Street, New York, New York 10005; The International Harry Schultz Letter, Harry Schultz, P.O. Box 1161, Basel 4002, Switzerland; The Dines Letter, James Dines and Co., Inc., 18 East 41st Street, New York, New York 10017.

[14]E. George Schaefer, Schaefer's Current Market Opinions (Indianapolis: E. George Schaefer), 19 November 1973, p. 548.

> stocks tend to decline less than other more glamorous market leaders, and some types may actually rise.[15]

Gold stocks during the Great Depression did react according to Cohen and Zinbarg's definition. Homestake and Dome are just two examples.

Table 1-5 and Table 1-6 indicate that Homestake Mining and Dome Mines clearly outperformed and increased in value at a much greater rate than the Dow Jones Industrial Average. However, is this always the case? Do gold stocks always react in a defensive manner or was this just an isolated case that has caused people to think that gold stocks are defensive.

> One type of company that is preeminently defensive is the gold mine. In a recession or depression, while all other prices may go down, the price of gold either remains fixed or is raised, while costs of mining decrease. As a result, in bear markets gold-mining shares have tended to rise.[16] (Underlining mine.)

An examination of this last sentence (underlined) was the focal point of this paper. It was the intention of this paper to examine the performance of ASA, Ltd., Dome Mines, Homestake Mining and Lake Shore Mines in relation to the Dow Jones Industrial Index, the Standard and Poor's 500 Composite Index and the New York Stock Exchange Composite Index to see if these gold stocks do in fact tend to rise in bear markets.

---

[15]Jerome B. Cohen and Edward D. Zinbarg, Investment Analysis and Portfolio Management (Homewood, Illinois: Richard D. Irwin, Inc., 1967), p. 21.

[16]Ibid., p. 22.

The period of time examined was January 1950 through October 1973. To the author's knowledge no study of this type has been previously accomplished.

TABLE 1-5

DOW JONES STOCK MARKET INDEX, 1927-1937

Year	High	Low
1927	202.40	152.73
1928	300.00	191.33
1929	381.17	198.69
1930	294.07	157.51
1931	194.36	73.79
1932	88.78	41.22
1933	108.67	50.16
1934	110.74	85.51
1935	148.44	96.71
1936	184.90	143.11
1937	194.40	113.64

SOURCE: Maurice L. Farrell, ed., Dow Jones Investor's Handbook (Princeton, New Jersey: Dow Jones Books, 1973), p. 54

TABLE 1-6

NEW YORK STOCK EXCHANGE PRICES:
HOMESTAKE MINING COMPANY AND DOME MINES
1929 - 1937

		Dome Mines	Homestake
Low	1929	6	65
High	1930	10 3/8	83
	1931	13 1/2	138
	1932	12 7/8	163
	1933	39 1/2	373
	1934	46 1/4	430
	1935	44 7/8	495
	1936	61 1/2	544
	1937	57 1/4	430

SOURCE: Hoppe, How to Invest in Gold Stocks, pp. 119-120.

Notes related to Table 1-6:

Homestake Dividends:

From July 1934 to May 1937, Homestake Mining Company paid $2 per month extra in dividends, and on 5 December 1935 declared an additional extra dividend of $20 per share. All these extras were in addition to the regular annual rate (paid quarterly) of $7 per share. The ten year record of Homestake dividends from 1928 to 1938 is as follows:

1928 . .	$ 7.00	1933 . .	$15.00
1929 . . .	7.00	1934 . . .	30.00
1930 . . .	8.00	1935 . . .	56.00
1931 . . .	8.45	1936 . . .	36.00
1932 . . .	10.60	1937 . . .	18.00

Dome Dividends:

Dome Mines dividends for the period 1928 through 1937 were:

1928 . . .	$1.00	1933 . . .	$1.80
1929 . . .	1.00	1934	3.50
1930 . . .	1.00	1935	4.00
1931 . . .	1.00	1936	4.00
1932 . . .	1.30	1937	4.50

Homestake stock was split 8 for 1 in 1938, increasing authorized capital shares from 251,160 to 2,009,280.

SOURCE: Hoppe, How to Invest in Gold Stocks, pp. 119-120.

CHAPTER II

METHODOLOGY

General Approach

The general approach undertaken in this study was to run a correlation between end of the month stock prices and end of the month market indices. Stocks of ASA, Ltd. (formerly American-South African, Ltd.), Dome Mines, Homestake Mining, and Lake Shore Mines were chosen because Barron's uses these four stocks to compile the Barron's Gold Mining Stock Group Average. This average is compiled as follows:

ASA	price x 9.978	=
Homestake	price x 2	=
Dome Mines	price x 1	=
Lake Shore Mines	price x 1	=
		total

Total ÷ 4 = Gold Mining Stock Average[1]

The Gold Mining Stock Average is then graphed in conjunction with the Dow Jones Industrial Average. Fig. 2-1 is the Barron's Gold Mining Stock Graph as it appeared in the Barron's Magazine June 23, 1973.[2]

Another reason that these four stocks were chosen is that each is traded on a major U.S. stock exchange. ASA, Ltd.

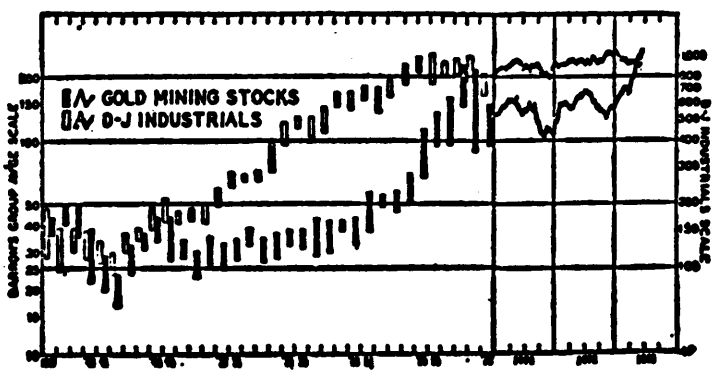
---

[1]Farrell, Dow Jones Investor's Handbook, p. 54.

[2]Barron's, 23 June 1973, p. 61.

(ticker symbol ASA), Dome Mines (ticker symbol DM) and Homestake Mining (ticker symbol HM) are all listed and actively traded on the New York Stock Exchange while Lake Shore Mines (ticker symbol LKK) is traded on the American Stock Exchange. ASA, Ltd. was the only stock not listed in 1950, which is the beginning of this study. ASA, Ltd. started trading on the New York Stock Exchange in December of 1958.

Fig. 2-1. Barron's Gold Mining Stock Graph 23 June 1973



These four stocks represent a general cross-section of the types of gold stocks available to the investor. ASA, Ltd., as a company, has no mines. Its assets are a large portfolio of quality South African gold mining stocks. ASA is considered a gold mining finance house. Dome Mines has controlling interest in several Canadian gold mines, one of which is Campbell Red Lake Mines (NYSE - CRK), the leading and most efficient gold producing mine in Canada. Homestake Mining Company was chartered in California 5 November, 1877, and is the largest gold producer in the Western Hemisphere.

Homestake has paid dividends each year since 1879 except in 1920 and 1943-1945. Lake Shore Mines was at one time a gold producer. The last gold was produced in 1970. Lake Shore is now essentially a holding company with substantial gold interests.

These four stocks were correlated with three market indicators: the Dow Jones Industrial Average, the Standard and Poor's 500 Composite Index, and the New York Stock Exchange Composite Index. The Dow Jones Industrial Average was chosen for two reasons. One, all the stocks are considered to be industrial stocks, and two, it is the most common index used in stock market studies. The Standard and Poor's 500 Composite Index was used because it is regarded as the best constructed of the market indices. The New York Stock Exchange Composite Index was used because it would give a comparison of the gold stocks performance against the performance of all the stocks listed on the New York Stock Exchange --not just a selected few which is the case with the Dow Jones Industrial Average.

The period of study selected was January 1950 through October 1973. This period was selected for several reasons. First, the period covers a length of 274 months which is long enough to give statistically valid information and gives a long term view of both the general stock market and the individual stocks to be analyzed. During this period the United States has had five Presidents: three Democrats--Truman,

Kennedy, and Johnson, and two Republicans--Eisenhower and Nixon. The period of 1950 through 1973 also had other significant events take place. For example, the launch of Sputnik in 1957, the U.S. diplomatic split with Cuba in 1960, President Kennedy's assassination in 1963, the wage-price freeze in 1971, a free market gold price of $127 per ounce reached in 1973, prime interest rate of 10 per cent and the Arab oil boycott in 1973.

Assumptions

There were three basic assumptions made in this study:

1. Month end stock prices and month end indices over a long period of time reflect historical trends
2. Indices tend to rise during inflationary periods and decline during non-inflationary periods
3. If gold stocks go up in a bear market and down in a bull market they will have statistically significant negative correlations with the market indices

The approach used in this study was to run correlations of the individual stocks with the market indices. The first step in doing this was to define bull and bear market periods from January 1950 through October 1973. The major bull and bear market periods from 1950 - 1973 are contained in Table 2-1.[3] The dates and type of markets contained in Table 2-2 were used for ASA, Ltd.[4]

---

[3]Karen Kidder, "Wall Street: Before the Fall," Monthly Review Supplement, 1970, Federal Reserve Bank of San Francisco, p. 19.

[4]Ibid.

TABLE 2-1

BULL AND BEAR MARKETS
JANUARY 1950 - OCTOBER 1973

Dates	Duration (Months)	Type
Jan 1950 - Jan 1953	37	Bull
Feb 1953 - Sept 1953	8	Bear
Oct 1953 - July 1956	34	Bull
Aug 1956 - Dec 1957	17	Bear
Jan 1958 - July 1959	19	Bull
Aug 1959 - Oct 1960	15	Bear
Nov 1960 - Dec 1961	14	Bull
Jan 1962 - Oct 1962	10	Bear
Nov 1962 - Jan 1966	39	Bull
Feb 1966 - Oct 1966	9	Bear
Nov 1966 - Dec 1968	26	Bull
Jan 1969 - May 1970	17	Bear
Jun 1970 - Apr 1971	11	Bull
May 1971 - Nov 1971	7	Bear
Dec 1971 - Jan 1973	14	Bull
Feb 1973 - Oct 1973	9	Bear

SOURCE: January 1950 through May 1970 information by Karen Kidder in "Wall Street: Before the Fall," and June 1970 through October 1973 information by the author.

TABLE 2-2

BULL AND BEAR MARKETS
DECEMBER 1958 - OCTOBER 1973

Date	Duration (Months)	Type
Dec 1958 - July 1959	8	Bull
Aug 1959 - Oct 1960	15	Bear
Nov 1960 - Dec 1961	14	Bull
Jan 1962 - Oct 1962	10	Bear
Nov 1962 - Jan 1966	39	Bull
Feb 1966 - Oct 1966	9	Bear
Nov 1966 - Dec 1968	26	Bull
Jan 1969 - May 1970	17	Bear
Jun 1970 - Apr 1971	11	Bull
May 1971 - Nov 1971	7	Bear
Dec 1971 - Jan 1973	14	Bull
Feb 1973 - Oct 1973	9	Bear

SOURCE: January 1950 through May 1970 information by Karen Kidder, "Wall Street: Before the Fall," and June 1970 through October 1973 information by the author.

The data needed for this study and their sources are:

1. The closing price of Dome Mines, Homestake Mining, and Lake Shore Mines for the last day of trading for each month from January 1950 through October 1973. The prices were found in selected issues of The Wall Street Journal

2. The closing price of American-South African, Ltd. (name change to ASA, Ltd. in June 1973) for the last day of trading for each month from December 1958 through October 1973. The prices were found in selected issues of The Wall Street Journal

3. The closing average of the Dow Jones Industrial Average for the last day of trading for each month from January 1950 through October 1973. This average was found in selected issues of The Wall Street Journal and in the Dow Jones Investors Handbook

4. The closing average of the Standard and Poor's 500 Composite Index for the last day of trading of each month from January 1950 through October 1973. This index was found in Standard and Poor's Trade and Securities Statistics Security Price Index Record from January 1950 through February 1972. The Index was found in Barron's from March 1972 through October 1973

5. The closing average of the New York Stock Exchange Composite Index for the last day of trading of each month from January 1950 through October 1973. This index was found in New York Stock Exchange Indexes for the period January 1950 through December 1968. The index for the period January 1969 through October 1973 was found in The Wall Street Journal

6. A separation of the stock market performance into bull and bear markets for the period January 1950 through October 1973. A chart showing the major bull and bear markets from September 1929 through May 1970 is contained in Wall Street: Before the Fall published by the Federal Reserve

Bank of San Francisco. The bull and bear markets from January 1950 through May of 1970 as defined by this chart are displayed in Table 2-1. The remaining bull and bear markets were determined by the author.

Specific Methodology

The specific methodology for obtaining the required data for this study was accomplished in the following manner:

1. Obtain the closing price of each stock for the last trading day of each month starting with January 1950 and ending with October 1973
2. Adjust each price for stock splits and stock dividends. Dome Mines and Lake Shore Mines did not have a stock split or issue stock dividends during the period of study. Homestake Mining declared a 2 per cent stock dividend in March 1967. To adjust for the stock dividend all stock prices from February 1967 through August 1968 would be multiplied by 1.02. In September 1968 Homestake stock split 2 for 1. All stock prices from September 1968 through October 1973 would be multiplied by 2.04. In May 1966 American-South African stock split 2 for 1. The stock price from May 1966 through May 1973 would be multiplied by 2. In June 1973, American-South African stock split again 2 for 1 and changed its name to ASA, Ltd. The stock price from June 1973 through October 1973 would be multiplied by 4.
3. Obtain the closing average for last day of trading for each month for the Dow Jones Industrial Average, the Standard and Poor's 500

Composite Average and the New York Stock Exchange Composite Average

4. Normalize all data setting the stock prices and indices equal to 100 per cent on 31 January 1950. The formula used was:

$$\frac{\text{Stock Price Adj. for Splits \& Div.}}{\text{Stock Price 31 Jan 1950}} \times 100 = \text{Normalized Value}$$

e.g. Dome Mines 31 January 1951

$\frac{\$17.375}{\$15.750} = 1.1032 \times 100 = 110.32$ (rounded to .00)

The same procedure was used to normalize the indices

e.g. DJIA 31 January 1951

$\frac{248.83}{201.79} = 1.2331 \times 100 = 123.31$ (rounded to .00)

The 31 January 1950 prices used in the denominator of the equation were:

(a) Dome Mines $15.750
(b) Homestake Mining $46.750
(c) Lake Shore Mines $11.625

The 31 January 1950 closing indices used in the denominator of the equation were:

(a) Dow Jones Industrial Avg. 201.79
(b) Standard and Poor's 500 Comp. Avg. 17.05
(c) New York Stock Exchange Comp. Avg. 9.96

The normalization of American-South African was accomplished in the same manner with December 1958 being the base period. The 31 December 1958 price used in the denominator of the equation was $28.375. The 31 December 1958 indices used in the denominator of the equations were:

(a) Dow Jones Industrial Avg. 583.65
(b) Standard and Poor's 500 Comp. Avg. 55.21
(c) New York Stock Exchange Comp. Avg. 28.85

5. Graph the normalized values of the three stock indices and the normalized value of each individual stock on semi-logarithmic graph paper.

Semi-logarithmic graph paper was used because it shows the percentage increase or decrease of the specific stock and the percentage increase or decrease in the indices on a scale easy to work with (i.e., the increase from 100 per cent to 200 per cent is the same distance on the graph as an increase from 200 per cent to 400 per cent)

6. Keypunch all data, format cards and instruction cards on 80-column cards

7. Separate the cards into bull and bear market periods in accordance with Tables 2-1 and 2-2 and run the data through a computer using a correlation program and plotter

8. Test the statistical significance of the correlations to the 5 per cent level of significance using "Percentiles of the Distribution of r when p = 0."[5] N-2 degrees of freedom are used with this table

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[5]Wilfrid J. Dixon and Frank J. Massey, Jr., Introduction to Statistical Analysis (New York: McGraw-Hill Book Co., 1969), Table A-30a, p. 569.

CHAPTER III

RESULTS

Correlations of Stocks to Selected Indices

The results of the correlations are contained in Tables 3-1, 3-2, 3-3, and 3-4.

TABLE 3-1

CORRELATIONS BETWEEN DOME MINES AND SELECTED INDICES

Period	DJIA	S & P 500 Composite Index	NYSE Composite Index	Type	Degrees of Freedom
Jan 1950-Jan 1953	0.8446	0.8817	0.8326	Bull	35
Feb 1953-Sep 1953	0.9381	0.9321	0.8941	Bear	6
Oct 1953-Jul 1956	-0.3993*	-0.4513*	-0.4198*	Bull	32
Aug 1956-Dec 1957	0.7383	0.7663	0.7433	Bear	15
Jan 1958-Jul 1959	0.8285	0.8337	0.8260	Bull	17
Aug 1959-Oct 1960	-0.6005*	-0.5406*	-0.5934*	Bear	13
Nov 1960-Dec 1961	0.2894	0.3191	0.3637	Bull	12
Jan 1962-Oct 1962	-0.8420*	-0.8311*	-0.8319*	Bear	8
Nov 1962-Jan 1966	0.8348	0.8227	0.8242	Bull	37
Feb 1966-Oct 1966	-0.3149	-0.3099	-0.3013	Bear	7
Nov 1966-Dec 1968	0.4706	0.6281	0.6624	Bull	24
Jan 1969-May 1970	0.8273	0.7138	0.7173	Bear	15
Jun 1970-Apr 1971	0.6887	0.7013	0.7000	Bull	9
May 1971-Nov 1971	0.5805	0.4890	0.4874	Bear	5
Dec 1971-Jan 1973	0.2828	0.3019	0.3047	Bull	12
Feb 1973-Oct 1973	-0.2728	-0.5497	-0.5570	Bear	7

*Indicates significant negative correlations: $\alpha = .05$.

TABLE 3-2

CORRELATIONS BETWEEN HOMESTAKE MINING AND SELECTED INDICES

Period	DJIA	S & P 500 Composite Index	NYSE Composite Index	Type	Degrees of Freedom
Jan 1950-Jan 1953	-0.5613*	-0.5566*	-0.5942*	Bull	35
Feb 1953-Sep 1953	0.9473	0.9505	0.9215	Bear	6
Oct 1953-Jul 1956	-0.2388	-0.2927	-0.2629	Bull	32
Aug 1956-Dec 1957	0.4235	0.2913	0.3900	Bear	15
Jan 1958-Jul 1959	0.5083	0.5336	0.5177	Bull	17
Aug 1959-Oct 1960	-0.4460	-0.3530	-0.4340	Bear	13
Nov 1960-Dec 1961	0.3016	0.3468	0.3756	Bull	12
Jan 1962-Oct 1962	-0.8347*	-0.8346*	-0.8406*	Bear	8
Nov 1962-Jan 1966	0.0946	0.0849	0.0820	Bull	37
Feb 1966-Oct 1966	0.2092	0.1872	0.2001	Bear	7
Nov 1966-Dec 1968	0.5122	0.6848	0.7176	Bull	24
Jan 1969-May 1970	0.8764	0.7575	0.7564	Bear	15
Jun 1970-Apr 1971	0.6489	0.6333	0.6359	Bull	9
May 1971-Nov 1971	0.5855	0.5263	0.5195	Bear	5
Dec 1971-Jan 1973	0.2688	0.3133	0.3196	Bull	12
Feb 1973-Oct 1973	-0.6289	-0.8015*	-0.7992*	Bear	7

*Indicates significant negative correlations: $\alpha = .05$.

TABLE 3-3

CORRELATIONS BETWEEN LAKE SHORE MINES
AND SELECTED INDICES

Period	DJIA	S & P 500 Composite Index	NYSE Composite Index	Type	Degrees of Freedom
Jan 1950-Jan 1953	-0.0284	-0.0088	-0.0286	Bull	35
Feb 1953-Sep 1953	0.8376	0.8789	0.8704	Bear	6
Oct 1953-Jul 1956	-0.6242*	-0.6530*	-0.6386*	Bull	32
Aug 1956-Dec 1957	0.5292	0.4546	0.5890	Bear	15
Jan 1958-Jul 1959	0.5768	0.5603	0.5526	Bull	17
Aug 1959-Oct 1960	0.0426	0.1597	0.0329	Bear	13
Nov 1960-Dec 1961	-0.8606*	-0.8331*	-0.8273*	Bull	12
Jan 1962-Oct 1962	-0.0363	-0.0018	-0.0225	Bear	8
Nov 1962-Jan 1966	-0.2818*	-0.3310*	-0.3089*	Bull	37
Feb 1966-Oct 1966	0.7882	0.7660	0.7702	Bear	7
Nov 1966-Dec 1968	0.7042	0.8115	0.8363	Bull	24
Jan 1969-May 1970	0.8765	0.7653	0.7703	Bear	15
Jun 1970-Apr 1971	-0.3782	-0.3862	-0.3725	Bull	9
May 1971-Nov 1971	0.6836	0.6154	0.6087	Bear	5
Dec 1971-Jan 1973	-0.1089	-0.0672	-0.0611	Bull	12
Feb 1973-Oct 1973	-0.081	-0.0848	-0.0623	Bear	7

*Indicates significant negative correlations: $\alpha = .05$.

TABLE 3-4

CORRELATIONS BETWEEN ASA, LTD.
(AMERICAN SOUTH AFRICAN)
AND SELECTED INDICES

Period	DJIA	S & P 500 Composite Index	NYSE Composite Index	Type	Degrees of Freedom
Dec 1958-Jul 1959	0.5278	0.6055	0.4786	Bull	6
Aug 1959-Oct 1960	0.5253	0.5199	0.3906	Bear	13
Nov 1960-Dec 1961	-0.4406	-0.3683	-0.3476	Bull	12
Jan 1962-Oct 1962	-0.9460*	-0.9551*	-0.9441*	Bear	8
Nov 1962-Jan 1966	0.8100	0.7942	0.7927	Bull	37
Feb 1966-Oct 1966	-0.0821	-0.0804	-0.0779	Bear	7
Nov 1966-Dec 1968	0.3873	0.5836	0.6199	Bull	24
Jan 1969-May 1970	0.8543	0.7317	0.7231	Bear	15
Jun 1970-Apr 1971	0.8005	0.7895	0.7973	Bull	9
May 1971-Nov 1971	0.6814	0.6401	0.6368	Bear	5
Dec 1971-Jan 1973	0.1313	0.1500	0.1790	Bull	12
Feb 1973-Oct 1973	-0.4775	-0.6988*	-0.6428	Bear	7

*Indicates significant negative correlations: $\alpha = .05$.

The numbers in the tables were obtained from computer printouts, a sample copy of which is contained in Appendix B. For Dome Mines, Homestake Mining and Lake Shore Mines the numbers appearing under the column labeled DJIA are the correlation between the stock prices normalized and the Dow

Jones Industrial Average normalized for the period indicated. The numbers appearing under the columns labeled S & P 500 and NYSE are the correlations between the stock prices normalized and these other market indices.

Referring to Appendix B computer printout, correlations between Dome Mines and each of the three market indices (DJIA, S & P 500 and NYSE) is represented by correlations between column two and rows eight, ten and twelve, respectively. Appendix C contains a summary of the raw data input to the computer and lists the content of all twelve columns of data.

Correlations between Homestake Mining and each of the three market indices and between Lake Shore Mines and each of the three indices is represented on the computer printout in a similar manner. Column four represents Homestake Mining and column six represents Lake Shore Mines. ASA, Ltd. was run separately since correlations were computed only from 1958 through 1973 instead of 1950 through 1973.

The sample computer printout in Appendix B represents the period January 1950 through January 1953, a total of thirty-seven months. Three computer plots are also contained in Appendix B: (1) a plot of Dome Mines against the DJIA showing a positive correlation (.8446), (2) a plot of Homestake Mining against the DJIA showing a negative correlation (-.5613), and (3) a plot of Lake Shore Mines against the DJIA showing essentially no correlation (-.0284).

CHAPTER IV

ANALYSIS

Dome Mines

Analysis of the correlations between Dome Mines and the selected indices (Table 3-1) shows that in three of the sixteen periods the stock was significantly negatively correlated at the 5 per cent level of significance with the indices. The first significant period was Oct 1953 - July 1956, a bull market that lasted thirty-four months. The negative correlation means that during this bull period the price of Dome Mines significantly decreased. This would be expected reaction of a defensive stock, however, this was the only bull market in which the stock price of Dome Mines decreased at a statistically significant level. In all other bull markets with the exceptions of Nov 1960 - Dec 1961 and Dec 1971 - Jan 1973, Dome Mines was significantly positively correlated with the market indices. In other words, as the market indices went up the price of Dome Mines also went up. In the case of the two exceptions, Dome Mines is positively correlated but not at the 5 per cent level of significance. This action would not be exptected of a defensive stock.

The stock price of Dome Mines is significantly, negatively correlated with the indices during the bear periods of

Aug 1959 - Oct 1960 and Jan 1962 - Oct 1962. This means that during these two bear markets the indices decreased while the stock price of Dome Mines increased. This would be expected of a defensive stock. However, during the other bear markets, with the exceptions of Feb 1966 - Oct 1966, May 1971 - Nov 1971, and Feb 1973 - Oct 1973, the price of Dome Mines was positively correlated with the bear markets (the price of Dome went down with the general market). During the bear market of May 1971 - Nov 1971, Dome was also positively correlated but not to a significant degree. During the bear markets of Feb 1966 - Oct 1966, and Feb 1973 - Oct 1973, the price of Dome Mines was negatively correlated to the market indices but not significant at the 5 per cent level of significance.

Homestake Mining Company

An analysis of Homestake Mining and the selected indices (Table 3-2) shows that Homestake was significantly negatively correlated with DJIA in two periods and the S & P 500 Composite and the NYSE Composite during three periods. Homestake was negatively correlated with the bull market period of Jan 1950 - Jan 1953, meaning that Homestake stock price decreased as the general market indices increased. The bull market of Oct 1953 - July 1956 shows Homestake to be negatively correlated but not significant at $\alpha = .05$. During the bull markets of Jan 1958 - July 1959, Nov 1966 - Dec 1968, and June 1970 - April 1971, Homestake was positively

correlated with the indices. The correlations for the remaining bull markets were not statistically significant.

During the bear markets of Jan 1962 - Oct 1962 and Feb 1973 - Oct 1973, Homestake Mining was negatively correlated to a significant degree. The first period was significantly correlated with all three indices while the second period was significantly correlated with the S & P 500 Composite and the NYSE Composite. During these two periods the stock price of Homestake increased as the indices decreased. The bear markets of Feb 1953 - Sep 1953 and Jan 1969 - May 1970, show Homestake to be significantly positively correlated with the market in general. In other words, as the market decreased the stock price of Homestake also decreased. The other bear markets show Homestake to be positively correlated, with the exception of Aug 1959 - Oct 1960, but the correlation is not significant. The period Aug 1959 - Oct 1960 shows Homestake to be negatively correlated but not to a significant degree.

Lake Shore Mines

An analysis of the correlation between Lake Shore Mines and selected indices (Table 3-3) shows that Lake Shore is significantly negatively correlated during the three bull markets of Oct 1953 - July 1956, Nov 1960 - Dec 1961, and Nov 1962 - Jan 1966. During these periods the stock price decreased as the indices increased. During the bull markets of Jan 1958 - July 1959, and Nov 1966 - Dec 1968 Lake Shore was significantly positively correlated with the indices.

During the bull markets of June 1970 - April 1971, and Dec 1971 - Jan 1973, Lake Shore is negatively correlated but not to a significant degree. The bear markets of Feb 1953 - Sep 1953, Aug 1956 - Dec 1957, Feb 1966 - Oct 1966, and Jan 1969 - May 1970, all show Lake Shore to be significantly positively correlated with the indices. This means that as the market indices decreased the stock price of Lake Shore also decreased. The remaining bear markets show Lake Shore Mines to be mixed with both positive and negative correlations but none of the correlations are statistically significant at $\alpha = .05$.

ASA, Ltd.

An analysis of American-South African (ASA, Ltd.) shows a significant negative correlation with all three indices in only the bear market period of Jan 1962 - Oct 1962. ASA is significantly negatively correlated with the S & P 500 Composite for the bear market of Feb 1973 - Oct 1973. During the bear markets of Aug 1959 - Oct 1960, and Jan 1969 - May 1970, ASA is significantly positively correlated, meaning that ASA went down with the rest of the market. The bear markets of Feb 1966 - Oct 1966, and Feb 1973 - Oct 1973 show ASA to be negatively correlated but not to a statistically significant degree with the exception of S & P 500 Composite for Feb 1973 - Oct 1973. The NYSE Composite for this period is only .0262 away from being statistically significant at $\alpha = .05$ and is significant at $\alpha = .10$. The

bear market of May 1971 - Nov 1971 shows ASA to be positively correlated but not at a significant level.

The bull markets of Nov 1962 - Jan 1966, Nov 1966 - Dec 1968, and Jan 1970 - April 1971 all show ASA to be significantly positively correlated. The bull markets of Dec 1958 - July 1959, and Dec 1971 - Jan 1973 show ASA to be positively correlated but not at a statistically significant level. The same is true with the bull market period Nov 1960 - Dec 1961 but with a negative correlation.

The first conclusion that can be drawn from the data is that the general statement made by Cohen and Zinbarg that ". . . in bear markets gold-mining shares have tended to rise"[1] is not valid for the four stocks analyzed during the period January 1950 through October 1973. Dome Mines increased in value in only two out of eight bear markets: Aug 1959 - Oct 1960 and Jan 1962 - Oct 1962. Homestake also increased in value in two out of eight bear markets: Jan 1962 - Oct 1962 and Feb 1973 - Oct 1973. Lake Shore Mines did not increase in value during any bear market. ASA, Ltd. has increased in value against all three indices during the bear market of Jan 1962 - Oct 1962 and against the S & P 500 Composite Index during Feb 1973 - Oct 1973. The study covered almost 23 years, eight bull markets and eight bear markets, for the stocks Dome Mines, Homestake Mining, and Lake Shore Mines. For ASA, Ltd. the study covered almost 14 years, six

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[1]Cohen and Zinbarg, Investment Analysis, p. 21.

bull markets and six bear markets. These four gold stocks have not acted in the typical manner of a defensive stock.

To draw some conclusions about gold stocks being a hedge against inflation each stock must be analyzed individually. The graphs in Appendix D show the relationship of the stocks to the indices. The graphs show the normalized values of each index and the normalized value of each stock. It is thought that investment in common stocks provides a hedge against inflation. The hedge occurs, in theory, because as inflation increases, unemployment decreases, corporate profits increase, wages and dividends increase, people have more disposable income, and common stock prices increase. The raise in stock prices is reflected by the rising stock indices.

From 31 January 1950 through 30 November 1973 the Dow Jones Industrial Average has increased 407.48 per cent, the S & P 500 Composite Index has increased 562.82 per cent and the NYSE Composite Index has increased 513.86 per cent. If you had bought the "averages" in 1950 your gain would be from 407 per cent to 562 per cent depending on the "average" you bought. If you had bought Dome Mines in 1950 you would have an increase of 790.48 per cent. Over the long run Dome Mines appears to be a better inflation hedge than the "averages." If you had bought Homestake Mining in 1950 your gain would be 224.14 per cent. Homestake then has not been as good a hedge as the "averages." Lake Shore Mines since 1950

has lost 76.4 per cent of its 1950 value. Lake Shore has not been a hedge against inflation. From 31 December 1958 through 30 November 1973 the DJIA has increased 140.88 per cent, the S & P 500 Composite Index has increased 173.81 per cent and the NYSE Composite has increased 177.40 per cent. Also, during this period ASA, Ltd. has increased by 844.05 per cent. ASA has outperformed the "averages" by approximately 550 per cent. ASA could very definitely be called a hedge against inflation.

From looking at the past it can be seen that gold stocks are not defensive in bear markets except possibly in special situations. During the Great Depression the price of gold was raised from $22 an ounce to $35 an ounce. The stockholders of gold mining companies saw the dividends increase sharply and the price of their shares increase to fantastic levels. The same special situation could be developing at this time. In the past two years the U.S. dollar has been officially devalued twice and unofficially once. The unofficial devaluation came when the two-tier system for gold was removed on 14 November 1973. The official price of gold was $42.22 per ounce and the free market price was about $100 per ounce. The official price of gold was the price at which the U.S. would exchange U.S. dollars for gold <u>if</u> the U.S. Government were to exchange gold for dollars--which it would not. The U.S. has not backed the dollar with gold since it closed the gold window in 1968. By

eliminating the two-tier gold system the central banks of the world were free to buy and sell gold on the free market. This unofficially devalued the dollar by 137 per cent.

The U.S. is now in a historically unique situation in that the U.S. is experiencing a high rate of inflation and increasing unemployment, at the same time. The cure for each is mutually exclusive and detrimental to the other. To check inflation the money supply might be decreased but this would likely cause increased unemployment. To reduce unemployment the government can increase spending and increase the money supply. Such action alone would likely cause increased inflation.

Another reason that the current bear market appears to be a unique situation for gold stocks is that the Arab nations are starting to make demands that their oil be paid for (either partially or in total) with gold or a strong gold-backed currency. It only makes sense that the countries with gold will want to get the most oil they can with the gold. For this reason many investment advisors are predicting a price of $200 or more an ounce for gold by the end of 1974. This would have a tremendous effect on the earnings of gold mines, similar to the devaluation from $22 an ounce to $35 an ounce in 1934. At $200 an ounce for gold, Homestake Mining should earn $7.20 a share and at eighteen times earnings should sell for $129 a share. Dome Mines should earn $9.60 a share and at eighteen times earnings should sell for $172

a share. The price of quality gold stocks could go much higher if a large number of investors want to own them. The number of gold shares listed on the major U.S. exchanges amount to a very small percentage of the total number of shares listed on the major U.S. exchanges. This means that not many shares are available to the investor and if many investors want gold shares then they may push the price of gold shares to very high levels. The supply is short and the demand may be high.

There is yet another reason that gold stocks may not show that they are defensive. This reason is the cyclic nature inherent in the stocks. The cyclic nature of the stocks was not considered in this study. The cyclic nature of gold stock is characterized in Fig. 4-1[2] and Table 4-1.

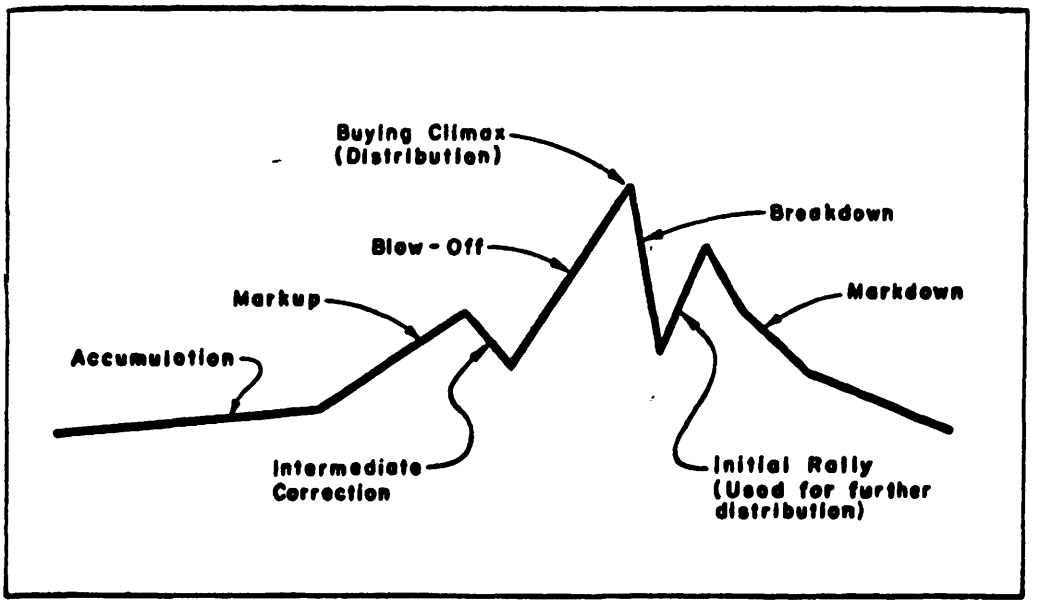

Fig. 4-1. Typical Trading Cycle of a Listed Stock Price Movement Pattern.

[2]Hoppe, How to Invest in Gold Stocks, Fig. 22, p. 317.

TABLE 4-1

TYPICAL TRADING CYCLE OF A LISTED STOCK: VOLUME AND PRICE ACTION

Market Phase	Trading Volume	Price Action
Accumulation	Low	Unchanged or Slowly Advancing
Markup	Moderate	Gradually but Steadily Advancing
Intermediate Correction	Moderate	One-third to One-Half Retreat from Previous High
Blowoff	Heavy	Rapid Advance
Buying Climax	Extremely Heavy	No Further Upward Progress
Breakdown	Heavy	Rapid Decline
Selling Climax	Very Heavy	No Further Downward Movement
Intermediate Rally	Moderate to Heavy	Advancing
Markdown	Moderate	Steady Decline with Occasional Small Rallies
Bottom	Very Light	Unchanged

SOURCE: Hoppe, How to Invest in Gold Stocks, Fig. 21, p. 316.

Recommendations for Further Study

Further study of gold stocks is needed in several areas:

1. The gold stock index in Barron's should be revised by eliminating Lake Shore Mines from the index and including a gold stock such as Campbell Red Lake Mines. The index should be computed in the same manner as the DJIA is computed since the two are graphed against each other
2. A new gold stock index should be constructed which includes the stock of the major gold mines sold on the major U.S. exchanges. This index should include South African gold stock sold in the form of American Depository Receipts (ADRs)
3. A study similar to this study could be accomplished and adjust the stock prices for the cyclic nature of the stocks. This would eliminate any bias caused by the stocks being in a particular part of a cycle during a bull or bear market
4. A study of the price action of gold shares during a monetary crisis would give some insight into the purchase of gold mining stock during a period of currency instability
5. A continuation of this study should be done in order to see if the gold stocks in this study are signigicantly negatively correlated throughout the bear market that is currently taking place

CHAPTER V

SUMMARY AND CONCLUSIONS

During the time span of this study, it is concluded that the four gold stocks surveyed (ASA, Ltd., Dome Mines, Homestake Mining and Lake Shore Mines) are not defensive. Dome Mines was only significantly negatively correlated with the selected indices in two bear markets and one bull market. Dome was significantly positively correlated with four bull markets and four bear markets. From the graphs in Appendix D, it can be determined that the capital gains of Dome have kept pace with the indices and could be termed an inflation hedge.

Homestake Mining was significantly negatively correlated with the seldcted indices in two bear markets and one bull market. However, Homestake was significantly positively correlated with three bull markets and two bear markets. Homestake is currently selling at approximately 225 per cent above its 31 January 1950 price. By examining the graphs in Appendix D and the figures in Chapter I it can be seen that a rise of approximately 600 per cent would be needed to say that Homestake was a hedge against inflation.

Lake Shore Mines was significantly negatively correlated with the selected indices in three bull markets and zero bear markets. However, it was significantly positively

correlated with two bull markets and four bear markets. The graphs in Appendix D show that Lake Shore has a capital loss of 76.4 per cent from 31 January 1950 to 31 October 1973. If the decrease in purchasing power of the dollar is also considered the loss is even greater. Lake Shore Mines can not be considered in any way an inflation hedge during this period.

American-South African (ASA, Ltd.) was significantly negatively correlated with the selected indices in one bear market and one index in another bear market. However, ASA, Ltd. was significantly positively correlated with three bull markets and two bear markets. The graphs in Appendix D show that ASA, Ltd. has increased in value approximately 550 per cent more than the averages over the same period of time. ASA, Ltd. could be termed a very good hedge against inflation.

This study has shown that from 31 January 1950 through 31 October 1973 the theory that gold stocks are defensive is invalid. It has also shown that selected gold stocks can be a hedge against inflation in the long run. During most of the time span of this study the official price of gold was fixed at $35 per ounce. In 1972 the official price of gold was raised to $38 per ounce and in 1973 the official price of gold was raised to $42.22 per ounce. On 14 November 1973 the two-tier gold system was abolished and technically the official price of gold is the free market price which on 10 May 1974 was $167.70 per ounce on the final fixing in London.

The rate of inflation in Europe and the United States currently varies between 8 and 18 per cent per year. Interest rates are at all time highs. Arab nations no longer want fiat currency in apyment for their oil. The Arabs are making overtures that oil must be paid for in part or in full with gold or currency convertible into gold. As inflation increases, people are converting their deteriorating currency into something that will store value. The historic store of value has been gold. The unique situation of no official gold price, high inflation, high interest rates, declining stock markets throughout the world, increased unemployment, deteriorating currency values, and Arab talk of demanding gold in payment for oil presents a new situation that could be profitable to major gold mines. It appears that 1974 is shaping up like the special situation of the 1930s for gold mining stocks. Profits, dividends, and capital gains are increasing as general market indices are decreasing.

APPENDIX A

HYPERINFLATION - HOW TO COME OUT AHEAD [1]

History shows that prolonged experimentation with fiat money usually ends in inflation so severe, rapid and widespread as to be given a special name - hyperinflation. During a hyperinflation, prices actually explode upward, causing massive economic disruptions. Probably the most famous recent example of hyperinflation was post WWI Germany, however many others have occurred (China from 1937 to 1949; Greece and Hungary during the late 1940s; France, about 1720 and 1790; etc.)

CONDITIONS FOR HYPERINFLATION

Hyperinflation cannot occur unless certain conditions evolve. A historical study of past hyperinflations shows that three conditions are necessary:

(1) The Emergency -- The trigger on the gun of hyperinflation is an "emergency" requiring large sums of money, for example; war, which results in voluminous consumption of goods and services within the country. If the emergency is of enough magnitude, traditional government financial resources, such as increased taxes and borrowing, will be outstripped. When all traditional sources of capital are exhausted, there remains one lucrative source - the printing press. Money can be created by printing it - or, in today's streamlined economies, by bookkeeping entries.

(2) The Monetary System -- For creation of money to be a viable source of capital, the monetary system must be structured to allow it. Systems in which the actual circulating medium is of precious metals are limited in the amount of expansion by the supply of the precious metal. True, the supply can be added to from purchases, extraction, and confiscation, but all of these sources are limited. Artificial expansion can occur by debasing precious metal coinage, but here, too, is a limit. Any noticeable debasement will set in motion Gresham's law, causing a reduction in the money stock through hoarding of the higher intrinsic value money.

Modern precious metal-paper money systems can be expanded, but with similar limitations. The ratio of paper to metal can be raised; however, any rapid succession of changes in the ratio will result in citizens switching out of paper into metal as they realize that defacto debasement is occurring. As a result, the paper money stock decreases. Even if the net stock of metal was great enough to allow great expansion of the money supply at a set ratio, the public would still limit the increase by increasing their preference for metal over paper as the inflation grew worse.

There is a "law" implied here: Any monetary system which has a convertible, material limit on its money supply is incapable of being hyperinflated.

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[1] Bernard Nagengast, "Hyperinflation - How To Come Out Ahead," The Forecaster (Tarzana, California: Forecaster Publishing Co., Inc.), 29 August 1973.

Thus, a monetary system where the amount of money is decided by fiat is necessary to allow large increases in money supply. Such a system will allow almost unlimited increases in money stocks, simply through government or central bank decisions to create whatever amount of money is necessary.

(3) The Economic System -- The third condition: The economic system must be liquid enough so that money will easily circulate. Large increases in money stock are useless unless the money circulates freely to purchase goods and services, causing the effect of rising prices.

STAGES OF HYPERINFLATION

The historical record of hyperinflations shows that three distinct stages are encountered once the initial conditions have been met.

Stage One - The initial cash flow -- Having exhausted traditional financial resources, the decision is made to create whatever money is needed. As a result of the influx of money into the economy, consumption increases, business booms and the theory that "inflation brings prosperity" becomes the slogan of both the public and the government. The simplistic connection between fiat money and prosperity becomes established, and it becomes expedient to continue expanding the money supply. The original emergency may be solved and replaced by a new one - that of manufacturing enough money to insure that prosperity continues.

Stage Two - Accelerating Issue and Depreciation -- Dependant on size and complexity of the economy, the surge of money results in steadily rising prices coupled with increased business activity for a period of time. However, a point is reached where further increases in the money supply result in a complex set of adverse effects, which are simultaneous and interdependent. These effects are psychological, economic, political, and social in nature, and become progressively more widespread as the hyperinflation continues.

The psychological driving force of expectation of continuing inflation by the public culminates in a 'flight' from cash into material goods. Future planning slows as the expectation of a worsening future instills a feeling of hopelessness. Business becomes afraid to venture into new production. Expectation tends to become self-reinforcing. Reduction in economic production and the flight from cash cause increasing upward pressure on prices. As prices increase, expectation becomes more firmly entrenched, causing still more upward pressure on prices. This tail chase of fewer goods - higher prices continues as long as the money supply is inflated.

Economically, increasing demand for material goods results in a marked increase in "velocity of circulation" - the amount of times a given unit of money changes hands. The fiat money becomes "hot money," rushing from one place to another, as citizens desire to hold material goods in lieu of cash. This rapid turning over of the money supply serves to push prices, and expectations, higher. Ultimately, price increases become astronomical, outstripping even the combined effects of money supply increases and increased velocity of that money. Price increases become dependent on expectation of the worst possible increase. Normal feedback mechanisms of the marketplace are disrupted as prices rise so fast that businessmen cannot assess market conditions.

As this market feedback ceases, prices must be blindly increased to cover all possible increases. Returns on business capital decrease and may disappear as a result of uncertain market conditions and destruction of the purchasing power of the capital base. Flight of capital from marginal return situations to more lucrative ventures, including those outside the inflation country, ensues. Thus, not only is the profit-making essence of business restricted by breakdown of market feedback, but the capital base itself is also destroyed through dilution and flight to safer areas.

As business activity slows, unemployment increases and real wages steadily drop. The demoralising effects of lower wages, unemployment and rising prices further reduce productivity of the business sector. Non-productive work in the form of paper shuffling, figure juggling, bureaucracy and speculation begins to replace the productive work of manufacturing, providing services, etc. Concentration begins to shift from production of real wealth into the pseudo-business of shifting existing wealth from one place to another. The net result is an overall decline in economic production. Here, we see the curious phenomenon of business depression and price inflation co-existing together.

Political attempts to control the economic conditions become widespread as the fiat money panacea begins to fail. A dilemma is evident. The inflation can be stopped by turning off the money faucet; however, if this is done, the overheated economy will collapse as it readjusts. Since this solution is politically non-expedient, it is easier to attempt to "control" the economy. Such devices as wage-price controls, capital controls, cash flow restrictions, and regulations on precious metals are tried in blind defiance to the historical fact that all such machinations never work. Economic controls only serve to further disrupt the economy. Curiously, failure of the controls seems to bring on harsher controls, and elimination of various liberties usually taken for granted becomes "necessary for the good of the nation." Unfortunately, such restrictions tend to remain, even when they are finally proven to be ineffective.

As conditions worsen, the social system breaks down. The framework of a failing economy and extensive government restriction causes cheating, stealing and backstabbing to become necessary and rewarding. Even the most stalwart statesmen can be reduced to unethical grafters, under the trauma of hyper-inflation.

Third Stage - Economic Collapse -- The final stage is the culmination of the effects of the second stage; the economy simply ceases to function. Productive business is nearly halted, and complete discouragement infects the populace. Price explosion continues for a time through expectation and money supply increase, although the velocity of circulation drops at this stage. By now, the public has learned to avoid use of paper money wherever possible, substituting metallic currency, foreign exchange and primitive barter. The ceasing of most productive business all but cuts off new supplies, and the flight form cash has reduced all existing inventories to near the disappearing point. The burgeoning money supply has no place to go.

Economic restrictions become harshest at this point since the government, in a panic because its medium of exchange is unacceptable, must use brute force

to make its money acceptable as payment. As in earlier stages, no amount of restriction or force halts the depreciation of the currency.

Finally, business, the economy, and perhaps the government and social system, collapse, or the government is forced to make drastic reforms in the form of (1) a return to a material backed monetary system; (2) reduction of the government deficit; and (3) various political and economic reforms designed to break the back of the expectation of continuing inflation.

HEDGES AGAINST HYPERINFLATION

The economy in a hyperinflation can become a cauldron of financial destruction unless one knows effective hedging means. History shows that the commonly touted inflation hedges of stocks, real estate, etc., do well during stage one when the economy is not disrupted. However, these hedges fail as stage two begins, with its accompanying economic trauma.

The only effective hedge in stages two and three is precious metals, especially gold. In fact, the increase in paper value of precious metals outstrips the depreciation of purchasing power, thus a profit can be made. The worse the conditions, the greater the disparity and the greater the possible profit. As paper money becomes worthless, precious metals look increasingly good to the public in comparison. The valuation placed on precious metals is especially so when the metal is in coin form where guarantee of purity and ease of divisability become plusses when barter evolves.

A warning is pertinent at this point - the hedge may be illegal. Frequently, in past hyperinflations, holding of precious metals was outlawed, and although this had no effect on the viability of the hedge, it did create risk of imprisonment to those who used metals as a protection. Should this become the case in a future hyperinflation, one has three choices: Leave the country; stay and accept whatever consequences befall; or, break the law. This is a decision each individual must make. There is no other hedge which is as effective throughout a hyperinflation. In any case, what should the strategy be?

(1) Education: Educate yourself in the mechanics of inflation and depression - study economic history. Since you probably won't be able to see the forest through the trees, past situations must serve as a basic guide to strategy, to be modified depending on individual conditions. This education should be digested before a hyperinflation is raging - once in the situation itself, all energy will be devoted to keeping your head above the water.

(2) Information: In order to modify the basic hyperinflation strategies gleaned from your studies, you must have a flow of current information. This comes from all the commonly used media: Newspapers, magazines, the financial press, and various advisory services. By digesting and ruminating on the information present in all these sources, you can keep abreast of the early stages of hyperinflation, utilizing standard inflation hedges to their maximum. Most of these information sources may become useless in later, chaotic stages, and, at that time, more dependence must be placed on historical precedents. This is the point where a hedge of precious metals allows you to sit tight, for, if the overall pattern of inflation changes, it will be the first time in recorded economic history.

(3) Act In Advance: All too often, people realize what the medicine is after the disease is rampaging. You must be different from the crowd, in that you must build your basic hedge ahead of everyone else. When everyone wants gold, or silver, you will have a hard time getting your share. Act in advance! When you see the storm clouds gathering, start preparing. Use standard inflation hedges as long as they are effective, but have a basic precious metal hedge, so you will be ready when all Hades breaks loose. If you get caught short, don't get emotional. Just remember what you learned from your research. History repeats itself, so even if you start late, you can still protect yourself. However, it's much easier, less nerve-wracking, and more profitable, if you have already secured yourself.

(4) Stay Loose: Don't get mentally or physically locked into one inflation hedge. Be prepared to move your capital from one medium to another as various hedges become less, or more, effective. Always have a reserve of cash-form capital to use as money-making opportunities arise.

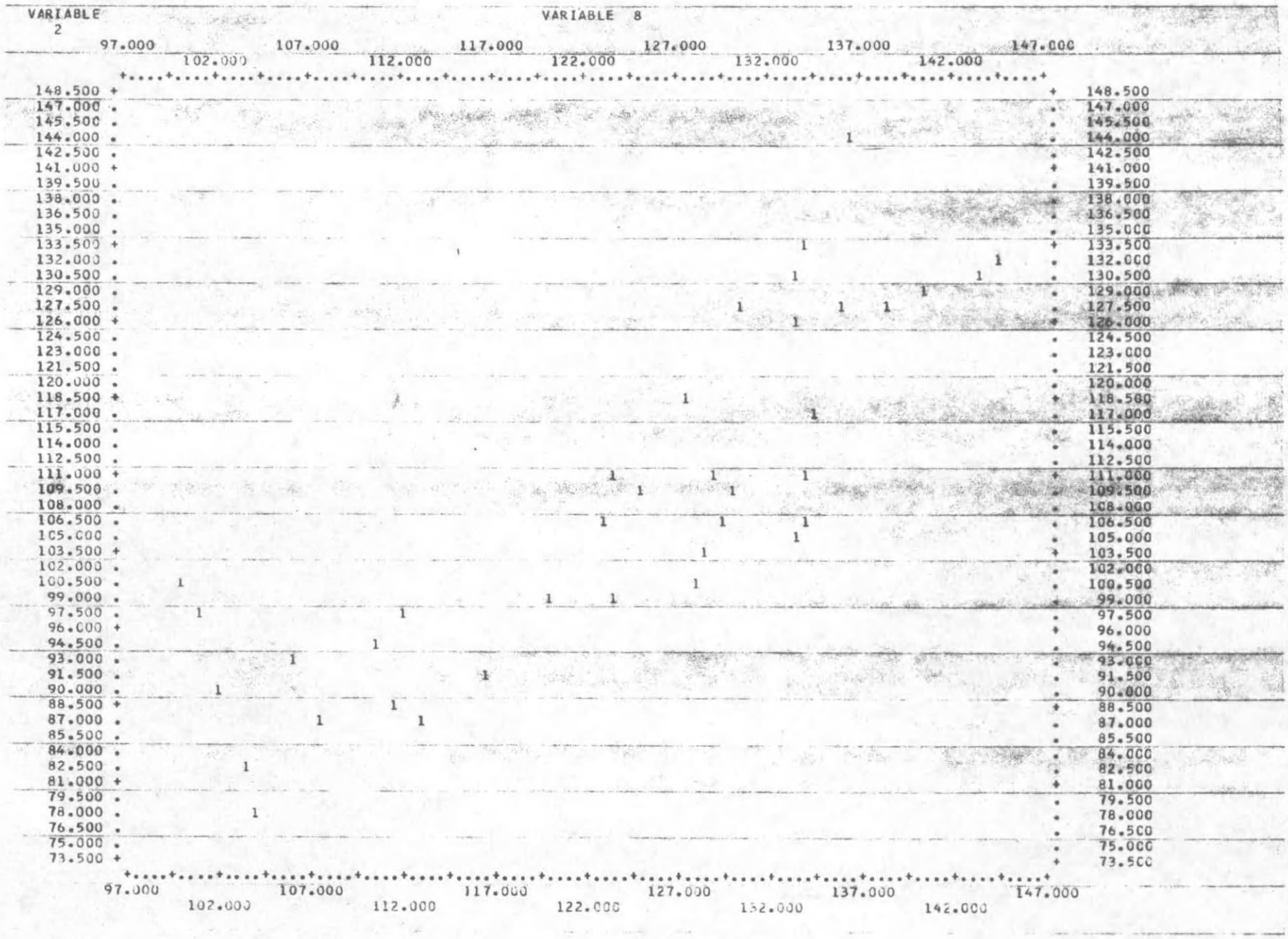
(5) Be Ethical: Never protect yourself at the expense of losing your ethical standards. Greed, pride and envy result in emotions which cloud clear thinking. Worse still, submission to these vices will elevate you at the expense of others. You want to help others, not destroy them - the hyperinflation is already doing that. By placing ethics first, you won't jeopardise your safety. Remember, you have the knowledge, a powerful weapon.

APPENDIX B

CORRELATION MATRIX

ROW	COL. 1	COL. 2	COL. 3	COL. 4	COL. 5	COL. 6	COL. 7	COL. 8
1	1.0000	1.0000	-0.2325	-0.2325	0.0669	0.0669	0.8446	0.8446
2	1.0000	1.0000	-0.2325	-0.2325	0.0670	0.0669	0.8446	0.8446
3	-0.2326	-0.2326	1.0000	1.0000	0.1282	0.1281	-0.5615	-0.5614
4	-0.2325	-0.2325	1.0000	1.0000	0.1281	0.1281	-0.5614	-0.5613
5	0.0669	0.0670	0.1282	0.1281	1.0000	1.0000	-0.0284	-0.0284
6	0.0669	0.0669	0.1281	0.1281	1.0000	1.0000	-0.0284	-0.0284
7	0.8446	0.8446	-0.5615	-0.5614	-0.0284	-0.0284	1.0000	1.0000
8	0.8446	0.8446	-0.5614	-0.5613	-0.0284	-0.0284	1.0000	1.0000
9	0.8817	0.8817	-0.5567	-0.5566	-0.0087	-0.0087	0.9918	0.9917
10	0.8817	0.8817	-0.5567	-0.5566	-0.0088	-0.0088	0.9918	0.9917
11	0.8327	0.8327	-0.5942	-0.5942	-0.0286	-0.0286	0.9905	0.9905
12	0.8326	0.8326	-0.5943	-0.5942	-0.0286	-0.0286	0.9905	0.9905

ROW	COL. 9	COL. 10	COL. 11	COL. 12	COL.	COL.	COL.	COL.
1	0.8817	0.8817	0.8327	0.8326				
2	0.8817	0.8817	0.8327	0.8326				
3	-0.5567	-0.5567	-0.5942	-0.5943				
4	-0.5566	-0.5566	-0.5942	-0.5942				
5	-0.0087	-0.0088	-0.0286	-0.0286				
6	-0.0087	-0.0088	-0.0286	-0.0286				
7	0.9918	0.9918	0.9905	0.9905				
8	0.9917	0.9917	0.9905	0.9905				
9	1.0000	1.0000	0.9871	0.9871				
10	1.0000	1.0000	0.9871	0.9871				
11	0.9871	0.9871	1.0000	1.0000				
12	0.9871	0.9871	1.0000	1.0000				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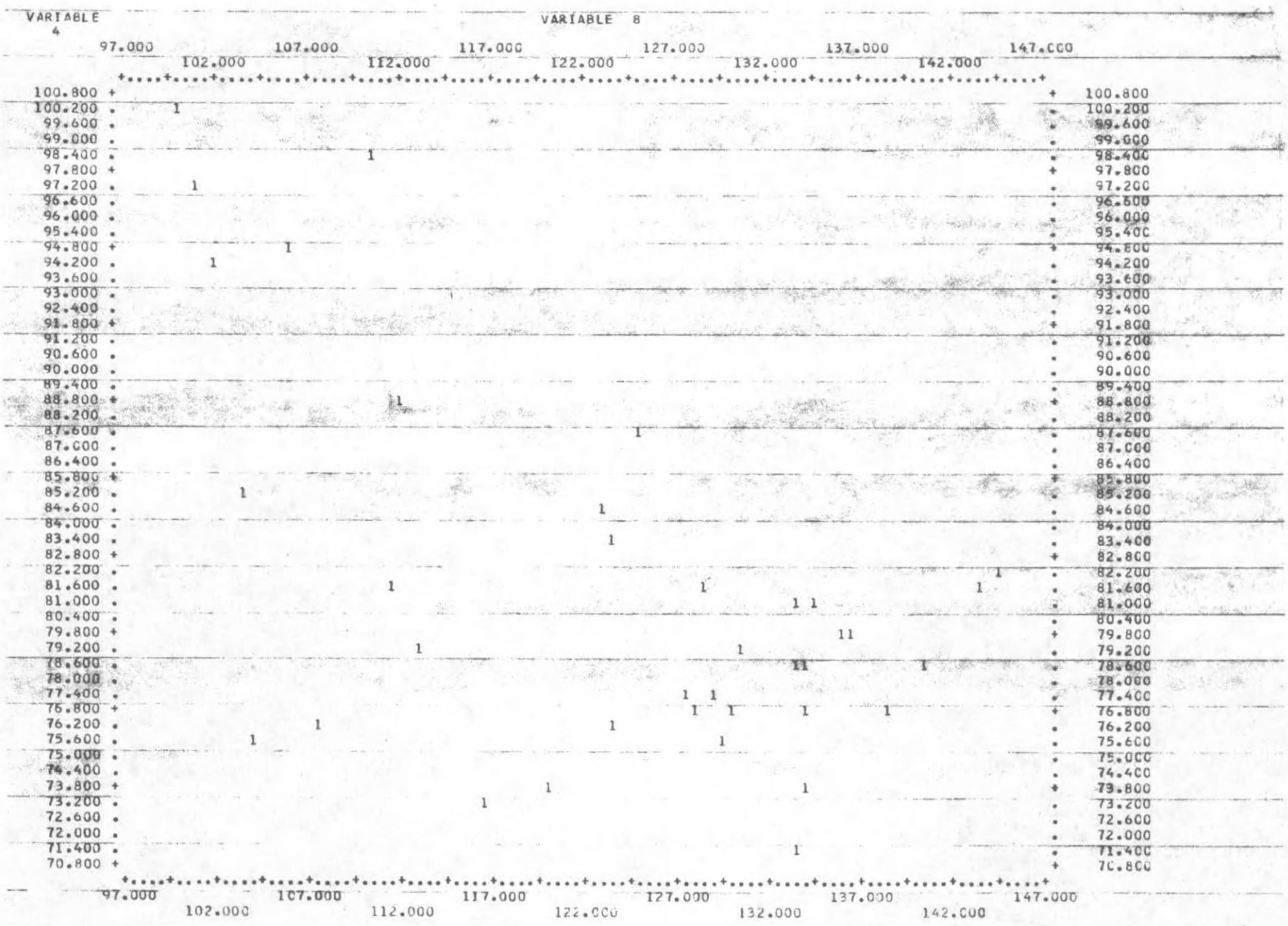
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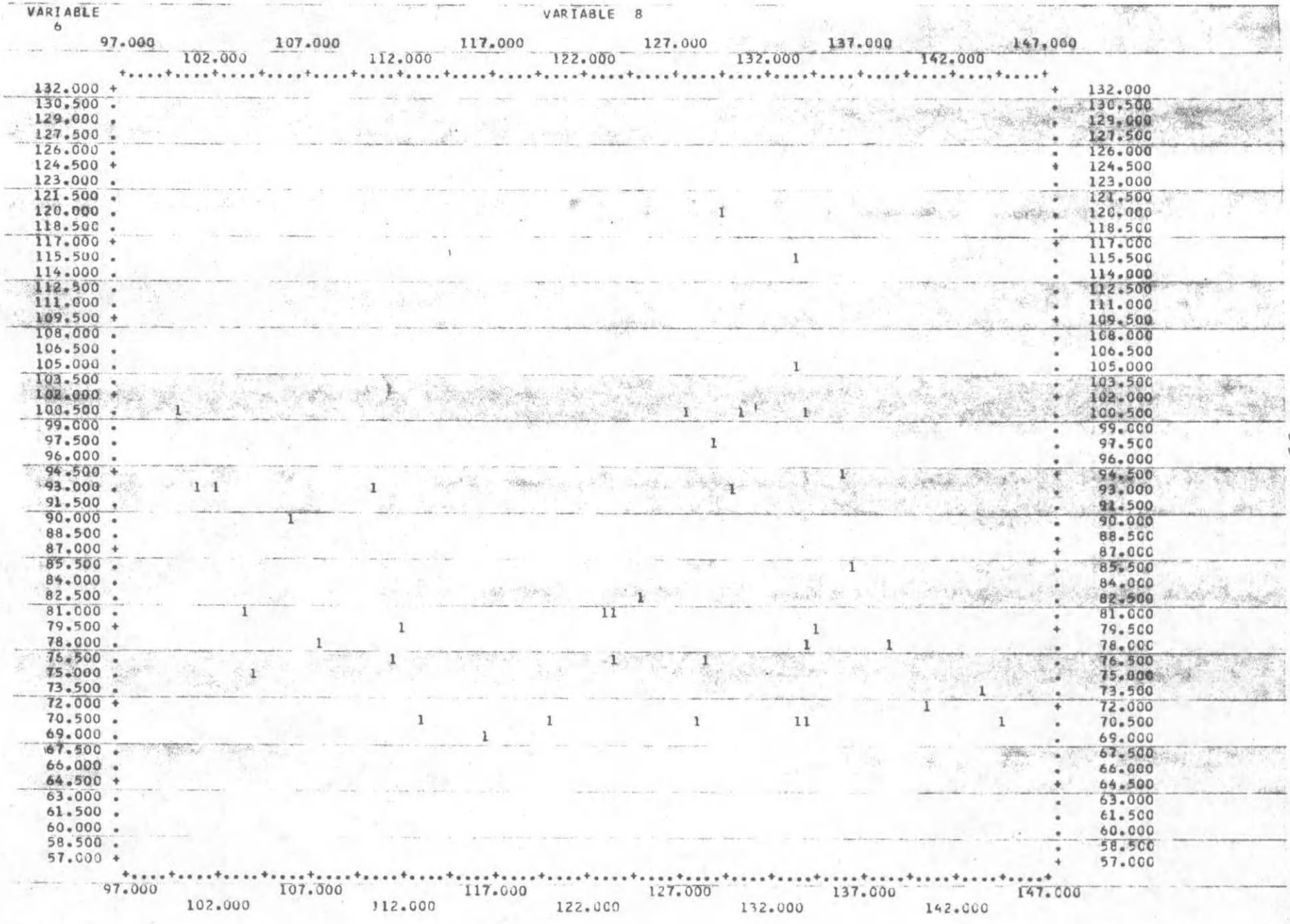
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APPENDIX C

DATA OF END OF MONTH STOCK PRICES, ADJUSTED FOR STOCK SPLITS AND STOCK DIVIDENDS,

NORMALIZED, AND SELECTED INDICIES AVERAGES, NORMALIZED

Month	Year	Dome Mines	Dome - Normalized	Homestake Mining	Homestake- Normalized	LakeShore Mines	LakeShore Normalized	DJIA	DJIA Normalized	S & P 500 Composite	S & P 500 Normalized	NYSE Composite	NYSE Normalized
01	50	15.750	100.00	46.750	100.00	11.625	100.00	201.79	100.00	17.05	100.00	9.96	100.00
02	50	15.250	96.83	45.500	97.33	10.750	92.47	203.44	100.82	17.22	101.00	10.15	101.90
03	50	14.125	89.68	44.000	94.12	10.875	93.55	206.05	102.11	17.29	101.41	10.44	104.82
04	50	14.750	93.65	44.250	94.65	10.500	90.32	214.33	106.24	18.07	105.98	10.70	107.43
05	50	14.875	94.44	46.000	98.40	10.875	93.55	223.42	110.72	18.78	110.15	11.04	110.84
06	50	13.000	82.54	39.750	85.03	9.500	81.72	209.11	103.63	17.69	103.75	10.44	104.82
07	50	12.250	77.78	35.250	75.40	8.750	75.27	209.40	103.77	17.84	104.63	10.54	105.82
08	50	13.750	87.30	35.500	75.94	9.000	77.42	216.87	107.47	18.42	108.04	11.01	110.54
09	50	15.250	96.83	41.500	88.77	9.250	79.57	226.36	112.18	19.45	114.08	11.44	114.86
10	50	14.000	88.89	38.125	81.55	8.875	76.34	225.01	111.51	19.53	114.55	11.60	116.47
11	50	13.750	87.30	37.000	79.14	8.250	70.97	227.60	112.79	19.51	114.43	11.94	119.88
12	50	14.500	92.06	34.125	72.99	8.000	68.82	235.41	116.66	20.41	119.71	12.01	120.58
01	51	17.375	110.32	39.000	83.42	9.500	81.72	248.83	123.31	21.66	127.04	12.67	127.21
02	51	17.250	109.52	41.000	87.70	9.625	82.80	252.05	124.91	21.80	127.86	12.96	130.12
03	51	16.675	105.87	39.500	84.49	9.500	81.72	247.94	122.87	21.40	125.51	12.51	125.60
04	51	16.250	103.17	38.250	81.82	8.875	76.34	259.13	128.42	22.43	131.55	13.15	132.03
05	51	15.500	98.41	35.625	76.20	8.875	76.34	249.65	123.72	21.52	126.22	12.44	124.90
06	51	15.500	98.41	34.500	73.80	8.250	70.97	242.64	120.24	20.96	122.93	12.34	123.90
07	51	15.875	100.79	36.000	77.01	8.250	70.97	257.86	127.79	22.40	131.38	13.18	132.33
08	51	16.875	107.14	36.875	78.88	8.125	69.89	270.25	133.93	23.28	136.54	13.60	136.55
09	51	18.375	116.67	37.750	80.75	9.250	79.57	271.16	134.38	23.26	136.42	13.62	136.75
10	51	17.250	109.52	36.000	77.01	10.875	93.55	262.35	130.01	22.94	134.55	13.01	130.62
11	51	16.750	106.35	35.250	75.40	14.000	120.43	261.27	129.48	22.88	134.19	12.89	129.42
12	51	16.625	105.56	33.500	71.66	13.500	116.13	269.23	133.42	23.77	139.41	13.60	136.55
01	52	17.375	110.32	34.625	74.06	11.625	100.00	270.69	134.14	24.14	141.58	14.01	140.66
02	52	17.500	111.11	36.125	77.27	11.375	97.85	260.08	128.89	23.26	136.42	13.34	133.94
03	52	19.750	125.40	37.875	81.02	12.125	104.30	269.46	133.53	24.37	142.93	13.91	139.66
04	52	18.750	119.05	36.125	77.27	11.625	100.00	257.63	127.67	23.32	136.77	13.39	134.44
05	52	20.125	127.78	37.125	79.41	11.625	100.00	262.94	130.30	23.86	139.94	13.55	136.04
06	52	20.000	126.98	37.250	79.68	11.000	94.62	274.26	135.91	24.96	146.39	13.99	140.46
07	52	20.000	126.98	36.000	77.01	9.125	78.49	279.56	138.54	25.40	148.97	14.12	141.77
08	52	22.750	144.44	37.250	79.68	10.000	86.02	275.04	136.30	25.03	146.80	13.94	139.96
09	52	21.000	133.33	36.000	77.01	9.000	77.42	270.61	134.10	24.54	143.93	13.68	137.35
10	52	20.500	130.16	36.750	78.61	8.250	70.97	269.23	133.42	24.52	143.81	13.55	136.04
11	52	20.250	128.57	36.625	78.34	8.375	72.04	283.66	140.57	25.66	150.50	14.23	142.87
12	52	20.750	131.75	38.375	82.09	8.125	69.89	291.90	144.66	26.57	155.84	14.49	145.48
01	53	20.500	130.16	38.250	81.82	8.500	73.12	289.77	143.60	26.38	154.72	14.55	146.08
02	53	22.375	142.06	40.875	87.43	8.750	75.27	284.27	140.87	25.90	151.91	14.39	144.48
03	53	21.750	138.10	40.000	85.56	8.500	73.12	279.87	138.69	25.29	148.33	14.39	144.48
04	53	20.375	129.37	39.000	83.42	8.000	68.82	274.75	136.16	24.62	144.40	13.41	134.64
05	53	18.500	117.46	37.250	79.68	7.875	67.74	272.28	134.93	24.54	143.93	13.57	136.24
06	53	17.875	113.49	37.000	79.14	7.375	63.44	268.26	132.94	24.14	141.58	13.36	134.14
07	53	17.750	112.70	37.500	80.21	6.875	59.14	275.38	136.47	24.75	145.16	13.60	136.55
08	53	15.500	98.41	35.875	76.74	6.500	55.91	261.22	129.45	23.32	136.77	13.10	131.53
09	53	16.250	103.17	35.375	75.67	5.375	46.24	264.04	130.85	23.35	136.95	12.84	128.92
10	53	15.750	100.00	35.750	76.47	6.000	51.61	275.81	136.68	24.54	143.93	13.44	134.94
11	53	15.000	95.24	34.875	74.60	6.125	52.69	281.37	139.44	24.76	145.22	13.62	136.75

Month	Year	Dome Mines	Dome - Normalized	Homestake Mining	Homestake- Normalized	LakeShore Mines	LakeShore Normalized	DJIA	DJIA Normalized	S & P 500 Composite	S & P 500 Normalized	NYSE Composite	NYSE - Normalized
12	53	14.250	90.48	33.000	70.59	5.500	47.31	280.90	139.20	24.81	145.51	13.60	136.55
01	54	16.125	102.38	35.250	75.40	6.250	53.76	292.39	144.90	26.08	152.96	14.29	143.47
02	54	16.000	101.59	35.250	75.40	5.750	49.46	294.54	145.96	26.15	153.37	14.39	144.48
03	54	16.750	106.35	40.000	85.56	6.125	52.69	303.51	150.04	26.94	158.01	14.60	146.59
04	54	16.125	102.38	40.125	85.83	5.750	49.46	319.33	158.25	28.26	165.75	15.57	156.33
05	54	15.875	100.79	42.000	89.84	5.750	49.46	327.49	162.29	29.19	171.20	15.91	159.74
06	54	15.625	99.21	41.125	87.97	5.375	46.24	333.53	165.29	29.21	171.32	16.02	160.84
07	54	17.000	107.94	46.000	98.40	6.375	54.84	347.92	172.42	30.88	181.11	16.79	168.57
08	54	16.375	103.97	44.625	95.45	6.000	51.61	335.80	166.41	29.83	174.96	16.68	167.47
09	54	16.500	104.76	45.125	96.52	6.125	52.69	360.46	178.63	32.31	189.50	17.47	175.40
10	54	15.625	99.21	46.500	99.47	5.500	47.31	352.14	174.51	31.68	185.81	17.00	170.68
11	54	17.125	108.73	48.250	103.21	5.500	47.31	386.77	191.67	34.24	200.82	18.50	185.74
12	54	18.000	114.29	47.750	102.14	6.375	54.84	404.39	200.40	35.98	211.03	19.40	194.78
01	55	17.250	109.52	44.250	94.65	6.125	52.69	408.83	202.60	36.63	214.84	19.36	194.38
02	55	16.750	106.35	43.625	93.32	6.250	53.76	411.87	204.11	36.76	215.60	19.81	198.90
03	55	18.250	115.87	43.250	92.51	6.000	51.61	409.70	203.03	36.58	214.55	19.97	200.50
04	55	16.750	106.35	41.875	89.57	5.750	49.46	425.65	210.94	37.96	222.64	20.47	205.52
05	55	16.125	102.38	40.125	85.83	5.500	47.31	424.86	210.55	37.91	222.35	20.55	206.33
06	55	16.000	101.59	39.375	84.22	5.500	47.31	451.38	223.69	41.03	240.65	22.00	220.88
07	55	15.125	96.03	39.250	83.96	5.750	49.46	465.85	230.86	43.52	255.25	22.79	228.82
08	55	15.125	96.03	37.000	79.14	5.500	47.31	468.18	232.01	43.18	253.26	22.55	226.41
09	55	15.250	96.83	35.500	75.94	5.125	44.09	466.62	231.24	43.67	256.13	22.61	227.01
10	55	14.375	91.27	35.250	75.40	5.000	43.01	454.87	225.42	42.34	248.33	22.05	221.39
11	55	14.375	91.27	36.250	77.54	4.500	38.71	483.26	239.49	45.51	266.92	23.50	235.94
12	55	14.125	89.68	35.375	75.67	4.500	38.71	488.40	242.03	45.48	266.74	23.71	238.05
01	56	14.750	93.65	36.000	77.01	5.875	50.54	470.74	233.28	43.82	257.01	22.69	227.81
02	56	15.000	95.24	37.125	79.41	5.500	47.31	483.65	239.68	45.34	265.92	23.76	238.55
03	56	15.500	98.41	37.250	79.68	5.250	45.16	511.79	253.63	48.48	284.34	25.21	253.11
04	56	14.675	93.17	36.375	77.81	5.375	46.24	516.12	255.77	48.38	283.75	25.09	251.90
05	56	14.125	89.68	34.250	73.26	4.500	38.71	478.05	236.90	45.20	265.10	23.48	235.74
06	56	14.125	89.68	32.750	70.05	4.875	41.94	492.78	244.20	46.97	275.48	24.56	246.59
07	56	14.000	88.89	34.250	73.26	4.500	38.71	517.81	256.61	49.39	289.68	25.61	257.13
08	56	14.125	89.68	33.625	71.93	4.500	38.71	502.04	248.79	47.51	278.65	24.82	249.20
09	56	13.375	84.92	32.875	70.32	4.000	34.41	475.25	235.52	45.35	265.98	23.61	237.05
10	56	13.375	84.92	33.250	71.12	3.750	32.26	479.85	237.80	45.58	267.33	24.09	241.87
11	56	12.675	80.48	32.125	68.72	3.000	25.81	472.78	234.29	45.08	264.40	23.61	237.05
12	56	12.500	79.37	34.750	74.33	4.000	34.41	499.47	247.52	46.67	273.72	24.35	244.48
01	57	13.125	83.33	35.625	76.20	4.625	39.78	479.16	237.45	44.72	262.29	23.54	236.35
02	57	13.125	83.33	34.750	74.33	5.500	47.31	464.62	230.25	43.26	253.72	22.98	230.72
03	57	13.375	84.92	36.375	77.81	4.750	40.86	474.81	235.30	44.11	258.71	23.45	235.44
04	57	13.250	84.13	35.750	76.47	5.250	45.16	494.36	244.99	45.74	268.27	24.43	245.28
05	57	13.250	84.13	36.000	77.01	6.500	55.91	504.93	250.23	47.43	278.18	25.35	254.52
06	57	13.000	82.54	35.250	75.40	7.875	67.74	503.29	249.41	47.37	277.83	25.35	254.52
07	57	13.000	82.54	34.500	73.80	7.000	60.22	508.52	252.00	47.91	281.00	25.85	259.54
08	57	13.125	83.33	35.625	76.20	5.625	48.39	484.35	240.03	45.22	265.22	24.16	242.57
09	57	12.750	80.95	34.250	73.26	5.250	45.16	456.30	226.13	42.42	248.80	22.74	228.31
10	57	11.375	72.22	32.500	69.52	4.125	35.48	441.04	218.56	41.06	240.82	21.55	216.37

Month	Year	Dome Mines	Dome - Normalized	Homestake Mining	Homestake- Normalized	LakeShore Mines	LakeShore Normalized	DJIA	DJIA Normalized	S & P 500 Composite	S & P 500 Normalized	NYSE Composite	NYSE Normalized
11	57	11.375	72.22	35.125	75.13	4.250	36.56	449.87	222.94	41.72	244.69	22.16	222.49
12	57	11.000	69.84	33.000	70.59	4.000	34.41	435.69	215.91	39.99	234.55	21.11	211.95
01	58	13.625	86.51	36.750	78.61	4.875	41.94	450.02	223.01	41.70	244.57	22.16	222.49
02	58	15.125	96.03	38.375	82.09	4.500	38.71	439.92	218.01	40.84	239.53	21.69	217.77
03	58	14.750	93.65	38.750	82.89	4.375	37.63	446.76	221.40	42.10	246.92	22.37	224.60
04	58	16.625	105.56	43.250	92.51	4.750	40.86	455.86	225.91	43.44	254.78	23.00	230.92
05	58	16.500	104.76	43.250	92.51	5.125	44.09	462.70	229.30	44.09	258.59	23.37	234.64
06	58	16.125	102.38	42.000	89.84	5.000	43.01	478.18	236.97	45.24	265.34	23.80	238.96
07	58	15.000	95.24	40.000	85.56	5.125	44.09	502.99	246.26	47.19	276.77	24.85	249.50
08	58	16.000	101.59	39.500	84.49	5.125	44.09	508.63	252.06	47.75	280.06	25.27	253.71
09	58	15.000	95.24	39.250	83.96	4.875	41.94	532.09	263.69	50.06	293.61	26.38	264.86
10	58	15.250	96.83	37.750	80.75	4.000	34.41	543.22	269.20	51.33	301.06	27.27	273.80
11	58	16.875	107.14	40.375	86.36	4.500	38.71	557.46	276.26	52.48	307.80	27.94	280.52
12	58	19.500	123.81	46.375	99.20	5.250	45.16	583.65	289.24	55.21	323.81	28.85	289.66
01	59	19.000	120.63	47.375	101.34	5.250	45.16	593.96	294.35	55.42	325.04	29.49	296.08
02	59	18.250	115.87	44.625	95.45	5.000	43.01	603.50	299.07	55.41	324.99	29.56	296.79
03	59	17.000	107.94	43.125	92.25	5.250	45.16	601.71	298.19	55.44	325.16	29.78	299.00
04	59	18.000	114.29	40.000	85.56	5.125	44.09	623.75	309.11	57.59	337.77	30.99	311.14
05	59	20.000	126.98	44.000	94.12	5.750	49.46	643.79	319.04	58.68	344.16	31.39	315.16
06	59	19.250	122.22	42.875	91.71	5.625	48.39	643.60	318.96	58.47	342.93	31.01	311.35
07	59	19.000	120.63	42.750	91.44	5.250	45.16	674.88	334.45	60.51	354.90	32.39	325.20
08	59	18.375	116.67	40.750	87.17	5.250	45.16	664.41	329.26	59.60	349.56	31.86	319.88
09	59	18.750	119.05	42.375	90.64	4.875	41.94	631.68	313.04	56.88	333.61	30.44	305.62
10	59	18.875	119.84	41.500	88.77	4.625	39.78	646.60	320.43	57.52	337.36	30.83	309.54
11	59	19.500	123.81	41.875	89.57	4.250	36.56	659.18	326.67	58.28	341.82	30.94	310.64
12	59	20.375	129.37	43.000	91.98	4.125	35.48	679.36	336.67	59.89	351.26	32.15	322.79
01	60	19.750	125.40	41.375	88.50	4.500	38.71	622.62	308.55	55.61	326.16	29.83	299.50
02	60	20.375	129.37	42.000	89.84	4.125	35.48	630.12	312.27	56.12	329.15	30.20	303.21
03	60	21.000	133.33	42.875	91.71	4.125	35.48	616.59	305.56	55.34	324.57	30.06	301.81
04	60	19.375	123.02	40.000	85.56	4.125	35.48	601.70	298.18	54.37	318.89	29.25	293.67
05	60	18.000	114.29	38.750	82.89	4.000	34.41	625.50	309.98	55.83	327.49	30.01	301.31
06	60	17.750	112.70	38.625	82.62	3.625	31.18	640.62	317.47	56.92	333.84	31.04	311.65
07	60	19.625	124.60	40.000	85.56	3.500	30.11	616.73	305.63	55.51	325.57	29.89	300.10
08	60	20.625	130.95	42.750	91.44	4.250	36.56	625.99	310.22	56.96	334.08	30.96	310.84
09	60	22.000	139.68	45.625	97.59	4.500	38.71	580.14	287.50	53.52	313.90	28.64	287.55
10	60	26.000	165.08	47.750	102.14	4.750	40.86	580.36	287.61	53.39	313.14	28.40	285.14
11	60	25.500	161.90	48.375	103.48	4.125	35.48	597.22	295.96	55.54	325.75	29.91	300.30
12	60	23.750	150.79	47.000	100.53	3.875	33.33	615.89	305.21	58.11	340.82	30.94	310.64
01	61	23.625	150.00	47.875	102.41	3.875	33.33	648.20	321.23	61.78	362.35	32.57	327.01
02	61	21.250	134.92	46.875	100.27	3.500	30.11	662.08	328.10	63.44	372.08	33.39	335.24
03	61	20.625	130.95	42.625	91.18	3.500	30.11	676.63	335.31	65.06	381.58	34.60	347.39
04	61	21.375	135.71	44.750	95.72	3.625	31.18	678.71	336.34	65.31	383.05	34.81	349.50
05	61	22.375	142.06	44.875	95.99	3.625	31.18	696.72	345.27	66.56	390.38	35.36	355.02
06	61	22.000	139.68	45.250	96.79	3.000	25.81	683.96	338.95	64.64	379.12	34.44	345.78
07	61	23.875	151.59	47.875	102.41	3.250	27.96	705.37	349.56	66.76	391.55	35.57	357.13
08	61	26.250	166.67	49.250	105.35	3.125	26.88	719.94	356.78	68.07	399.24	36.00	361.45
09	61	23.250	147.62	47.375	101.34	3.000	25.81	701.21	347.49	66.73	391.38	35.55	356.93

Month	Year	Dome Mines	Dome - Normalized	Homestake Mining	Homestake-Normalized	LakeShore Mines	LakeShore Normalized	DJIA	DJIA Normalized	S & P 500 Composite	S & P 500 Normalized	NYSE Composite	NYSE Normalized
10	61	25.500	161.90	50.000	106.95	3.000	25.81	703.92	348.84	68.62	402.46	36.47	366.16
11	61	27.250	173.02	51.375	109.89	3.250	27.96	721.60	357.60	71.32	418.30	38.45	386.04
12	61	26.750	169.84	50.500	108.02	2.750	23.66	731.14	362.33	71.55	419.65	38.39	385.44
01	62	25.375	161.11	48.000	102.67	3.000	25.81	700.00	346.90	68.84	403.75	36.50	366.47
02	62	24.750	157.14	48.000	102.67	2.875	24.73	708.05	350.88	69.96	410.32	37.55	377.01
03	62	23.375	148.41	46.500	99.47	2.875	24.73	706.95	350.34	69.55	407.92	37.26	374.10
04	62	23.750	150.79	45.250	96.79	2.625	22.58	665.33	329.71	65.24	382.64	35.50	356.43
05	62	25.750	163.49	49.000	104.81	2.750	23.66	613.36	303.96	59.63	349.74	31.91	320.38
06	62	27.750	176.19	54.000	115.51	3.125	26.88	561.28	278.15	54.75	321.11	29.33	294.48
07	62	26.500	168.25	50.125	107.22	3.125	26.88	597.93	296.31	58.23	341.52	30.67	307.93
08	62	27.000	171.43	53.625	114.71	2.750	23.66	609.18	301.89	59.12	346.74	31.78	319.08
09	62	26.750	169.84	53.625	114.71	2.750	23.66	578.98	286.92	56.27	330.03	30.20	303.21
10	62	26.000	165.08	52.750	112.83	2.625	22.58	589.77	292.27	56.52	331.50	29.30	294.18
11	62	24.625	156.35	46.500	99.47	2.500	21.51	649.30	321.77	62.62	367.27	33.57	337.05
12	62	23.125	146.83	43.125	92.25	2.250	19.35	652.10	323.16	63.10	370.09	33.81	339.46
01	63	27.250	173.02	48.500	103.74	2.750	23.66	682.85	338.40	66.20	388.27	35.44	355.82
02	63	27.000	171.43	48.000	102.67	2.750	23.66	662.94	328.53	64.29	377.07	35.39	355.32
03	63	28.125	178.57	49.500	105.88	2.625	22.58	682.52	338.23	66.57	390.44	35.74	358.84
04	63	26.000	165.08	46.000	98.40	2.375	20.43	717.70	355.67	69.80	409.38	37.41	375.60
05	63	26.750	169.84	48.500	103.74	2.250	19.35	726.96	360.26	70.80	415.25	37.97	381.22
06	63	27.375	173.81	50.125	107.22	2.000	17.20	706.88	350.30	69.37	406.86	37.15	372.99
07	63	28.375	180.16	51.250	109.63	2.250	19.35	695.43	344.63	69.13	405.45	36.54	366.87
08	63	31.250	198.41	52.000	111.23	2.125	18.28	729.32	361.43	72.50	425.22	38.81	389.66
09	63	28.375	180.16	48.500	103.74	2.000	17.20	732.79	363.14	71.70	420.53	38.66	388.15
10	63	26.375	167.46	47.125	100.80	2.000	17.20	755.23	374.27	74.01	434.08	39.69	398.49
11	63	25.875	164.29	45.000	96.26	1.875	16.13	750.52	371.93	73.23	429.50	39.29	394.48
12	63	25.500	161.90	45.000	96.26	1.875	16.13	762.95	378.09	75.02	440.00	39.92	400.80
01	64	26.250	166.67	43.000	91.98	1.625	13.98	785.34	389.19	77.04	451.85	41.37	415.36
02	64	26.500	168.25	46.375	99.20	1.750	15.05	800.14	396.52	77.80	456.30	41.85	420.18
03	64	26.500	168.25	44.000	94.12	1.875	16.13	813.29	403.04	78.98	463.23	42.53	427.01
04	64	26.000	165.08	43.250	92.51	1.875	16.13	810.77	401.79	79.46	466.04	42.82	429.92
05	64	27.625	175.40	41.250	88.24	2.000	17.20	820.56	406.64	80.37	471.38	43.16	433.33
06	64	26.875	170.63	42.000	89.84	1.875	16.13	831.50	412.06	81.69	479.12	43.77	439.46
07	64	28.750	182.54	42.375	90.64	1.875	16.13	841.10	416.82	83.18	487.86	44.65	448.29
08	64	29.000	184.13	42.250	90.37	1.875	16.13	838.48	415.52	81.83	479.94	44.02	441.97
09	64	32.500	206.35	45.250	96.79	2.250	19.35	875.37	433.80	84.18	493.72	45.34	455.22
10	64	31.500	200.00	46.250	98.93	2.125	18.28	873.08	432.67	84.86	497.71	45.80	459.84
11	64	32.500	206.35	47.125	100.80	2.375	20.43	875.43	433.83	84.42	495.13	45.58	457.63
12	64	39.375	250.00	53.125	113.64	2.000	17.20	874.13	433.19	84.75	497.07	45.65	458.33
01	65	33.750	214.29	46.625	99.73	2.000	17.20	902.86	447.43	87.56	513.55	47.07	472.59
02	65	36.250	230.16	49.750	106.42	2.125	18.28	903.48	447.73	87.43	512.79	47.11	472.99
03	65	37.750	239.68	52.125	111.50	2.250	19.35	889.05	440.58	86.16	505.34	46.45	466.37
04	65	36.375	230.95	49.750	106.42	2.125	18.28	922.31	457.06	89.11	522.64	47.95	481.43
05	65	36.375	230.95	49.000	104.81	1.875	16.13	918.04	454.95	88.42	518.59	47.50	476.91
06	65	35.250	223.81	48.625	104.01	1.875	16.13	868.03	430.17	84.12	493.37	44.95	451.31
07	65	38.375	243.65	51.000	109.09	2.000	17.20	881.74	436.96	85.25	500.00	45.65	458.33
08	65	39.750	252.38	51.125	109.36	1.875	16.13	893.10	442.59	87.17	511.26	46.76	469.48

Month	Year	Dome Mines	Dome - Normalized	Homestake Mining	Homestake-Normalized	LakeShore Mines	LakeShore Normalized	DJIA	DJIA Normalized	S & P 500 Composite	S & P 500 Normalized	NYSE Composite	NYSE Normalized
09	65	36.125	229.37	48.625	104.01	1.750	15.05	930.58	461.16	89.96	527.62	48.24	484.34
10	65	37.750	239.68	48.625	104.01	2.000	17.20	960.82	476.15	92.42	542.05	49.55	497.49
11	65	38.250	242.86	46.875	100.27	2.000	17.20	946.71	469.16	91.61	537.30	49.29	494.88
12	65	36.500	231.75	45.125	96.52	2.000	17.20	969.26	480.33	92.43	542.11	50.00	502.01
01	66	40.875	259.52	49.250	105.35	3.000	25.81	983.51	487.39	92.88	544.75	50.44	506.43
02	66	37.500	238.10	47.000	100.53	3.000	25.81	951.89	471.72	91.22	535.01	49.61	498.09
03	66	38.250	242.86	46.000	98.40	3.500	30.11	924.77	458.28	89.23	523.34	48.37	485.64
04	66	36.250	230.16	44.750	95.72	3.125	26.88	933.68	462.70	91.06	534.08	49.29	494.88
05	66	46.375	294.44	51.750	110.70	3.125	26.88	884.07	438.11	86.13	505.16	46.50	466.87
06	66	46.250	293.65	47.125	100.80	2.750	23.66	870.10	431.19	84.74	497.01	45.91	460.94
07	66	49.875	316.67	51.875	110.96	2.875	24.73	847.38	419.93	83.60	490.32	45.29	454.72
08	66	42.000	266.67	46.375	99.20	2.625	22.58	788.41	390.71	77.10	452.20	41.65	418.17
09	66	42.875	272.22	46.250	98.93	2.500	21.51	774.22	383.68	76.56	449.03	41.30	414.66
10	66	36.625	232.54	37.375	79.95	2.125	18.28	807.07	399.96	80.20	470.38	43.16	433.33
11	66	37.125	235.71	41.750	89.30	2.125	18.28	791.59	392.28	80.45	471.85	43.59	437.65
12	66	43.000	273.02	42.000	89.84	1.875	16.13	785.69	389.36	80.33	471.14	43.72	438.96
01	67	39.500	250.79	43.500	93.05	2.375	20.43	849.89	421.18	86.61	507.98	47.30	474.90
02	67	40.250	255.56	42.000	89.84	2.375	20.43	839.37	415.96	86.78	508.97	47.56	477.51
03	67	41.125	261.11	41.820	89.45	2.375	20.43	865.98	429.15	90.20	529.03	49.52	497.19
04	67	40.250	255.56	43.223	92.46	2.250	19.35	897.05	444.55	94.01	551.38	51.54	517.47
05	67	44.500	282.54	45.900	98.18	2.375	20.43	852.56	422.50	89.08	522.46	49.17	493.67
06	67	46.000	292.06	44.625	95.45	2.500	21.51	860.26	426.31	90.64	531.61	50.27	504.72
07	67	49.375	313.49	45.773	97.91	4.375	37.63	904.24	448.11	94.75	555.72	52.65	528.61
08	67	42.500	269.84	47.430	101.45	4.500	38.71	901.29	446.65	93.64	549.21	52.07	522.79
09	67	42.750	271.43	47.685	102.00	3.875	33.33	926.66	459.22	96.71	567.21	53.71	539.26
10	67	42.000	266.67	47.685	102.00	4.250	36.56	879.74	435.97	93.90	550.73	52.13	523.39
11	67	48.500	307.94	51.893	111.00	3.250	27.96	875.81	434.02	94.00	551.32	52.26	524.70
12	67	56.500	358.73	64.388	137.73	4.000	34.41	905.11	448.54	96.47	565.81	53.83	540.46
01	68	60.500	384.13	70.635	151.09	4.375	37.63	855.47	423.94	92.24	541.00	51.66	518.67
02	68	80.500	511.11	84.788	181.36	4.875	41.94	840.50	416.52	89.36	524.11	49.77	499.70
03	68	54.500	346.03	65.663	140.46	4.875	41.94	840.67	416.61	90.20	529.03	50.05	502.51
04	68	60.375	383.33	71.400	152.73	4.000	34.41	912.22	452.06	97.59	572.38	54.49	547.09
05	68	63.750	404.76	77.138	165.00	5.625	48.39	899.00	445.51	98.68	578.77	55.50	557.23
06	68	62.625	397.62	75.990	162.55	5.125	44.09	897.80	444.92	99.58	584.05	56.08	563.05
07	68	55.000	349.21	69.743	149.18	4.500	38.71	883.00	437.58	97.74	573.26	54.78	550.00
08	68	60.250	382.54	67.193	143.73	4.625	39.78	896.01	444.03	98.86	579.82	55.44	556.63
09	68	63.875	405.56	70.635	151.09	5.375	46.24	935.79	463.74	102.67	602.17	57.70	579.32
10	68	62.000	393.65	71.400	152.73	5.000	43.01	952.39	471.97	103.41	606.51	58.17	584.04
11	68	67.875	430.95	80.835	172.91	6.500	55.91	985.08	488.17	108.37	635.60	61.27	615.16
12	68	72.500	460.32	86.445	184.91	7.500	64.52	943.75	467.69	103.86	609.15	58.90	591.37
01	69	74.750	474.60	85.680	183.27	8.875	76.34	946.05	468.83	103.01	604.16	58.38	586.14
02	69	80.500	511.11	86.955	186.00	7.875	67.74	905.21	448.59	98.13	575.54	55.19	554.12
03	69	72.375	459.52	86.190	184.36	7.125	61.29	935.48	463.59	101.51	595.37	56.85	570.78
04	69	73.750	468.25	82.620	176.73	6.875	59.14	950.18	470.88	103.69	608.15	57.99	582.23
05	69	71.750	455.56	64.515	138.00	6.250	53.76	937.56	464.62	103.46	606.80	57.87	581.02
06	69	64.375	408.73	60.690	129.82	5.375	46.24	873.19	432.72	97.71	573.08	54.13	543.47
07	69	47.500	301.59	44.625	95.45	3.875	33.33	815.47	404.12	91.83	538.59	50.64	508.43

Month	Year	Dome Mines	Dome - Normalised	Homestake Mining	Homestake- Normalised	LakeShore Mines	LakeShore Normalised	DJIA	DJIA Normalised	S & P 500 Composite	S & P 500 Normalised	NYSE Composite	NYSE Normalised
08	69	53.750	341.27	51.765	110.73	4.375	37.63	836.72	414.65	95.51	560.18	52.94	531.53
09	69	54.500	346.03	52.020	111.27	4.750	40.86	813.09	402.94	93.12	546.16	51.69	518.98
10	69	47.375	300.79	45.900	98.18	4.000	34.41	855.99	424.20	97.24	570.32	54.45	546.69
11	69	48.250	306.35	42.075	90.00	3.625	31.18	812.30	402.55	93.81	550.21	52.49	527.01
12	69	47.125	299.21	34.170	73.09	2.750	23.66	800.36	396.63	92.06	539.94	51.53	517.37
01	70	50.500	320.63	37.230	79.64	3.000	25.81	744.06	368.73	85.02	498.65	47.54	477.31
02	70	49.000	311.11	33.405	71.45	3.375	29.03	777.59	385.35	89.50	524.93	50.10	503.01
03	70	60.000	380.95	42.585	91.09	3.750	29.03	785.57	389.30	89.63	525.70	49.87	500.70
04	70	47.375	300.79	39.525	84.55	3.500	30.11	736.07	364.77	81.52	478.12	44.82	450.00
05	70	49.500	314.29	40.290	86.18	3.250	27.96	700.44	347.11	76.55	448.97	41.78	419.48
06	70	55.250	350.79	48.450	103.64	3.750	32.26	683.53	338.73	72.72	426.51	39.58	397.39
07	70	55.750	353.97	45.900	98.18	3.750	32.26	734.12	363.80	78.05	457.77	42.43	426.00
08	70	59.000	374.60	50.745	108.55	3.875	33.33	764.58	378.90	81.52	478.12	44.32	444.98
09	70	57.000	361.90	45.135	96.55	3.750	32.26	760.68	376.97	84.21	493.90	46.14	463.25
10	70	63.125	400.79	50.745	108.55	3.875	33.33	755.61	374.45	83.25	488.27	45.28	454.62
11	70	65.500	415.87	53.295	114.00	3.500	30.11	794.09	393.52	87.20	511.44	47.41	476.00
12	70	57.750	366.67	46.665	99.82	2.875	24.73	838.92	415.74	92.15	540.47	50.23	504.32
01	71	57.625	365.87	46.920	100.36	3.125	26.88	868.50	430.40	95.88	562.35	52.64	528.51
02	71	65.500	415.87	56.865	121.64	3.750	32.26	878.83	435.52	96.75	567.45	53.19	534.04
03	71	68.000	431.75	56.610	121.09	3.625	31.18	904.37	448.17	100.31	588.33	55.44	556.63
04	71	66.625	423.02	57.630	123.27	3.625	31.18	941.75	466.70	103.95	609.68	57.27	575.00
05	71	67.500	428.57	52.530	112.36	3.500	30.11	907.81	449.88	99.63	584.34	54.92	551.41
06	71	60.500	384.13	48.195	103.09	3.125	26.88	891.14	441.62	99.70	584.75	55.09	553.11
07	71	71.500	453.97	55.080	117.82	3.500	30.11	858.43	425.41	95.58	560.59	52.81	530.22
08	71	62.375	396.03	49.725	106.36	3.125	26.88	898.07	445.05	99.03	580.82	54.74	549.60
09	71	64.625	410.32	49.215	105.27	3.000	25.81	887.19	439.66	98.34	576.77	54.33	545.48
10	71	53.000	336.51	37.740	80.73	2.500	21.51	839.00	415.78	94.23	552.67	52.07	522.79
11	71	54.000	342.86	44.880	96.00	2.625	22.58	831.34	411.98	93.99	551.26	51.84	520.48
12	71	54.250	344.44	36.465	78.00	2.250	19.35	890.20	441.15	102.09	598.77	56.43	566.57
01	72	65.000	412.70	48.705	104.18	3.000	25.81	902.17	447.08	104.68	613.96	57.71	579.42
02	72	64.000	406.35	47.940	102.55	3.000	25.81	928.13	459.95	107.35	629.62	59.24	594.78
03	72	66.000	419.05	46.920	100.36	2.875	24.73	940.70	466.18	107.20	628.74	59.68	599.20
04	72	66.250	420.63	47.940	102.55	2.750	23.66	954.17	472.85	107.67	631.50	60.00	602.41
05	72	74.625	473.81	56.355	120.55	3.500	30.11	960.72	476.10	109.35	641.35	60.76	610.04
06	72	78.125	496.03	58.650	125.45	4.000	34.41	929.03	460.39	107.14	628.39	59.31	595.48
07	72	78.625	499.21	58.650	125.45	4.250	36.56	924.74	458.27	107.39	629.85	59.09	593.27
08	72	73.000	463.49	55.335	118.36	3.750	32.26	963.73	477.59	111.23	652.38	61.11	613.55
09	72	67.750	430.16	53.805	115.09	3.250	27.96	953.27	472.41	110.55	648.39	60.60	608.43
10	72	62.000	393.65	51.000	109.09	2.875	24.73	955.52	473.52	111.58	654.43	61.12	613.65
11	72	64.250	407.94	48.450	103.64	2.750	23.66	1018.21	504.59	116.67	684.28	63.88	641.37
12	72	68.750	436.51	48.450	103.64	2.500	21.51	1020.02	505.49	119.10	698.53	64.48	647.40
01	73	80.000	507.94	58.140	124.36	3.375	29.03	999.02	495.08	116.03	680.53	62.75	630.02
02	73	79.875	507.14	62.985	134.73	3.250	27.96	955.07	473.30	111.68	655.01	60.00	602.41
03	73	79.875	507.14	72.420	154.91	3.500	30.11	951.01	471.29	111.52	654.08	59.85	600.90
04	73	88.750	563.49	85.170	182.18	4.000	34.41	921.43	456.63	106.97	627.39	56.73	569.58
05	73	97.250	617.46	98.685	211.09	3.500	30.11	901.41	446.71	104.95	615.54	55.42	556.43
06	73	98.000	622.22	98.940	211.64	3.250	27.96	891.41	441.75	104.26	611.50	54.84	550.60

Month	Year	Dome Mines	Dome - Normalized	Homestake Mining	Homestake-Normalized	LakeShore Mines	LakeShore Normalized	DJIA	DJIA Normalized	S & P 500 Composite	S & P 500 Normalized	NYSE Composite	NYSE Normalized
07	73	92.750	588.89	97.155	207.82	3.125	26.88	926.40	459.09	108.25	634.90	57.65	578.82
08	73	83.500	530.16	88.230	188.73	2.750	23.66	887.57	439.85	104.25	611.44	55.64	558.63
09	73	87.250	553.97	84.915	181.64	2.875	24.73	947.10	469.35	108.43	635.95	58.51	587.45
10	73	100.750	639.60	91.405	195.50	2.750	23.60	956.58	474.00	108.29	635.13	58.28	585.10

DATA OF END OF MONTH STOCK PRICES, ADJUSTED FOR STOCK SPLITS AND STOCK DIVIDENDS, NORMALIZED, AND SELECTED INDICIES AVERAGES, NORMALIZED

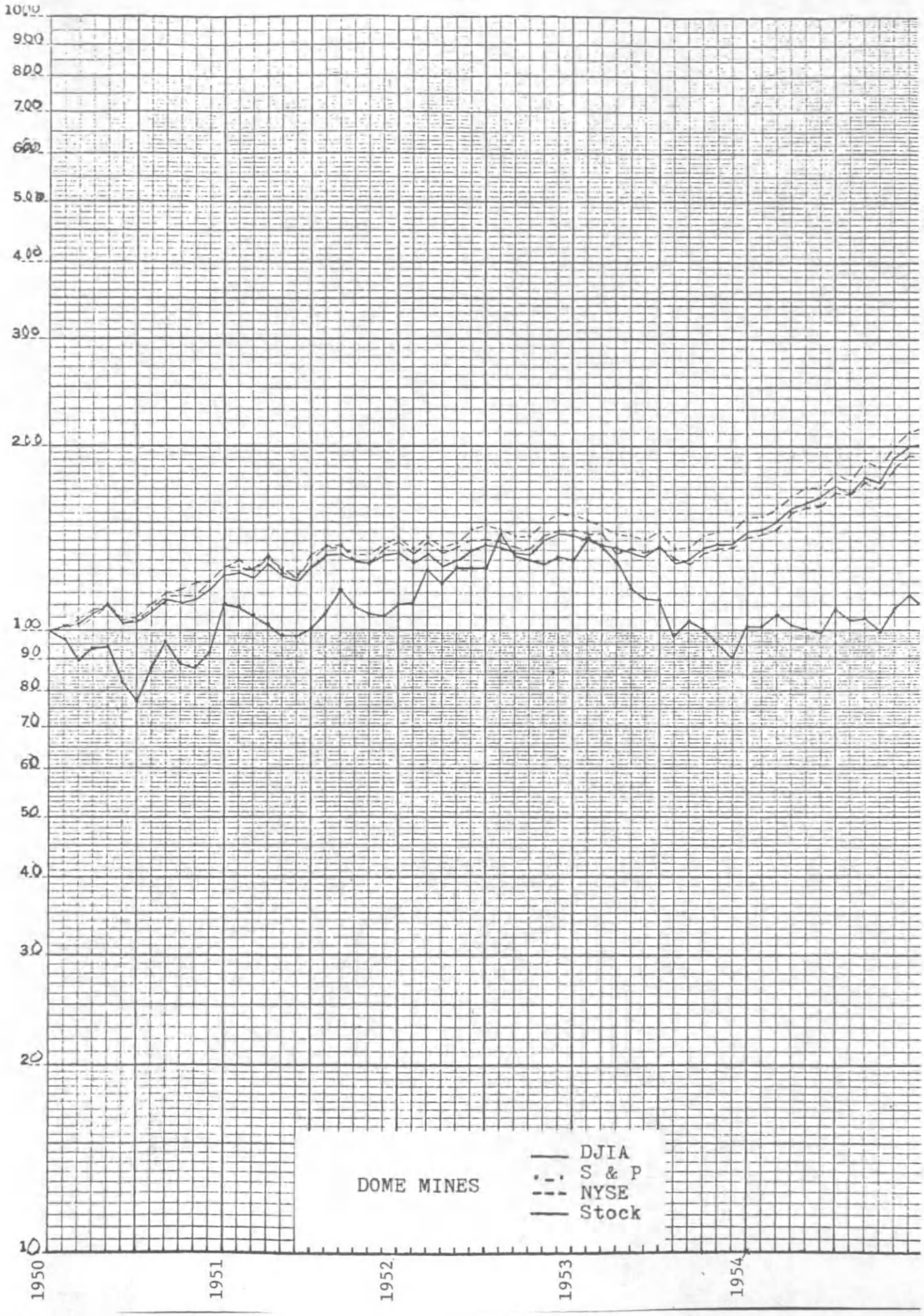
Month	Year	ASA, Ltd.	ASA, Ltd. Normalized	DJIA	DJIA Normalized	S & P 500 Composite	S & P 500 Normalized	NYSE Composite	NYSE Normalized
12	58	28.375	100.00	583.65	100.00	55.21	100.00	28.85	100.00
01	59	28.250	99.56	593.96	101.77	55.42	100.38	29.49	102.22
02	59	27.250	96.04	603.50	103.40	55.41	100.36	29.56	102.46
03	59	26.750	94.27	601.71	103.09	55.44	100.42	29.78	103.22
04	59	27.875	98.24	623.75	106.87	57.59	104.31	30.99	107.42
05	59	29.750	104.85	643.79	110.30	58.68	106.29	31.39	108.80
06	59	29.625	104.41	643.60	110.27	58.47	105.90	31.01	107.49
07	59	28.500	100.44	674.88	115.63	60.51	109.60	32.39	112.27
08	59	28.375	100.00	664.41	113.84	59.60	107.95	31.86	110.43
09	59	28.250	99.56	631.68	108.23	56.88	103.02	30.44	105.51
10	59	29.375	103.52	646.60	110.79	57.52	104.18	30.83	106.86
11	59	30.625	107.93	659.18	112.94	58.28	105.56	30.94	107.24
12	59	34.250	120.70	679.36	116.40	59.89	108.48	32.15	111.44
01	60	31.500	111.01	622.62	106.68	55.61	100.72	29.83	103.40
02	60	29.375	103.52	630.12	107.96	56.12	101.65	30.20	104.68
03	60	23.375	82.38	616.59	105.64	55.34	100.24	30.06	104.19
04	60	22.250	78.41	601.70	103.09	54.37	98.48	29.25	101.39
05	60	21.500	75.77	625.50	107.17	55.83	101.12	30.01	104.02
06	60	19.875	70.04	640.62	109.76	56.92	103.10	31.04	107.59
07	60	19.875	70.04	616.73	105.67	55.51	100.54	29.89	103.60
08	60	22.750	80.18	625.99	107.25	56.96	103.17	30.96	107.31
09	60	24.750	87.22	580.14	99.40	53.52	96.94	28.64	99.27
10	60	25.500	89.87	580.36	99.44	53.39	96.70	28.40	98.44
11	60	25.000	88.11	597.22	102.33	55.54	100.60	29.91	103.67
12	60	23.375	82.38	615.89	105.52	58.11	105.25	30.94	107.24
01	61	23.750	83.70	648.20	111.06	61.78	111.90	32.57	112.89
02	61	21.750	76.65	662.08	113.44	63.44	114.91	33.39	115.74
03	61	20.375	71.81	676.63	115.93	65.06	117.84	34.60	119.93
04	61	20.250	71.37	678.71	116.29	65.31	118.29	34.81	120.66
05	61	19.125	67.40	696.72	119.37	66.56	120.56	35.36	122.56
06	61	18.125	63.88	683.96	117.19	64.64	117.08	34.44	119.38
07	61	19.875	70.04	705.37	120.85	66.76	120.92	35.57	123.29
08	61	23.000	81.06	719.94	123.35	68.07	123.29	36.00	124.78
09	61	20.375	71.81	701.21	120.14	66.73	120.87	35.55	123.22
10	61	22.500	79.30	703.92	120.61	68.62	124.29	36.47	126.41
11	61	23.625	83.26	721.60	123.64	71.32	129.18	38.45	133.28
12	61	21.000	74.01	731.14	125.27	71.55	129.60	38.39	133.07
01	62	21.375	75.33	700.00	119.93	68.84	124.69	36.50	126.52
02	62	21.500	75.77	708.05	121.31	69.96	126.72	37.55	130.16
03	62	22.500	79.30	706.95	121.13	69.55	125.97	37.26	129.15
04	62	24.500	86.34	665.33	113.99	65.24	118.17	35.50	123.05
05	62	26.500	93.39	613.36	105.09	59.63	108.01	31.91	110.61
06	62	28.625	100.88	561.28	96.17	54.75	99.17	29.33	101.66
07	62	27.750	97.80	597.93	102.45	58.23	105.47	30.67	106.31
08	62	29.750	104.85	609.18	104.37	59.12	107.08	31.78	110.16
09	62	30.000	105.73	578.98	99.20	56.27	101.92	30.20	104.68
10	62	29.750	104.85	589.77	101.05	56.52	102.37	29.30	101.56

Month	Year	ASA, Ltd.	ASA, Ltd. Normalized	DJIA	DJIA Normalized	S & P 500 Composite	S & P 500 Normalized	NYSE Composite	NYSE Normalized
11	62	28.125	99.12	649.30	111.25	62.62	113.42	33.57	116.36
12	62	26.750	94.27	652.10	111.73	63.10	114.29	33.81	117.19
01	63	31.000	109.25	682.85	117.00	66.20	119.91	35.44	122.84
02	63	30.250	106.61	662.94	113.59	64.29	116.45	35.39	122.67
03	63	33.875	119.38	682.52	116.94	66.57	120.58	35.74	123.88
04	63	32.875	115.86	717.70	122.97	69.80	126.43	37.41	129.67
05	63	32.625	114.98	726.96	124.55	70.80	128.24	37.97	131.61
06	63	33.125	116.74	706.88	121.11	69.37	125.65	37.15	128.77
07	63	35.250	124.23	695.43	119.15	69.13	125.21	36.54	126.66
08	63	37.500	132.16	729.32	124.96	72.50	131.32	38.81	134.52
09	63	35.000	123.35	732.79	125.55	71.70	129.87	38.66	134.00
10	63	31.875	112.33	755.23	129.40	74.01	134.05	39.69	137.57
11	63	30.750	108.37	750.52	128.59	73.23	132.64	39.29	136.19
12	63	30.125	106.17	762.95	130.72	75.02	135.88	39.92	138.37
01	64	30.250	106.61	785.34	134.56	77.04	139.54	41.37	143.40
02	64	33.500	118.06	800.14	137.09	77.80	140.92	41.85	145.06
03	64	34.375	121.15	813.29	139.35	78.98	143.05	42.53	147.42
04	64	33.875	119.38	810.77	138.91	79.46	143.92	42.82	148.42
05	64	32.500	114.54	820.56	140.59	80.37	145.57	43.16	149.60
06	64	32.000	112.78	831.50	142.47	81.69	147.96	43.77	151.72
07	64	33.750	118.94	841.10	144.11	83.18	150.66	44.65	154.77
08	64	35.000	123.35	838.48	143.66	81.83	148.22	44.02	152.58
09	64	38.250	134.80	875.37	149.98	84.18	152.47	45.34	157.16
10	64	40.125	141.41	873.08	149.59	84.86	153.70	45.80	158.75
11	64	40.250	141.85	875.43	149.99	84.42	152.91	45.58	157.99
12	64	46.000	162.11	874.13	149.77	84.75	153.50	45.65	158.23
01	65	44.750	157.71	902.86	154.69	87.56	158.59	47.07	163.15
02	65	48.000	169.16	903.48	154.80	87.43	158.36	47.11	163.29
03	65	54.500	192.07	889.05	152.33	86.16	156.06	46.45	161.01
04	65	50.125	176.65	922.31	158.02	89.11	161.40	47.95	166.20
05	65	53.375	188.11	918.04	157.29	88.42	160.15	47.50	164.64
06	65	53.000	186.78	868.03	148.72	84.12	152.36	44.95	155.81
07	65	64.500	227.31	881.74	151.07	85.25	154.41	45.65	158.23
08	65	69.000	243.17	893.10	153.02	87.17	157.89	46.76	162.08
09	65	66.250	233.48	930.58	159.44	89.96	162.94	48.24	167.21
10	65	64.000	225.55	960.82	164.62	92.42	167.40	49.55	171.75
11	65	61.375	216.30	946.71	162.21	91.61	165.93	49.29	170.85
12	65	55.500	195.59	969.26	166.07	92.43	167.42	50.00	173.31
01	66	72.250	254.63	983.51	168.51	92.88	168.23	50.44	174.84
02	66	66.625	234.80	951.89	163.09	91.22	165.22	49.61	171.96
03	66	67.500	237.89	924.77	158.45	89.23	161.62	48.37	167.66
04	66	69.000	243.17	933.68	159.97	91.06	164.93	49.29	170.85
05	66	89.000	313.66	884.07	151.47	86.13	156.00	46.50	161.18
06	66	81.750	288.11	870.10	149.08	84.74	153.49	45.91	159.13
07	66	84.250	296.92	847.38	145.19	83.60	151.42	45.29	156.98
08	66	75.500	266.08	788.41	135.08	77.10	139.65	41.65	144.37
09	66	71.000	250.22	774.22	132.65	76.56	138.67	41.30	143.15

Month	Year	ASA, Ltd.	ASA, Ltd. Normalized	DJIA	DJIA Normalized	S & P 500 Composite	S & P 500 Normalized	NYSE Composite	NYSE Normalized
10	66	62.250	219.38	807.07	138.28	80.20	145.26	43.16	149.60
11	66	64.500	227.31	791.59	135.63	80.45	145.72	43.59	151.09
12	66	67.000	236.12	785.69	134.62	80.33	145.50	43.72	151.54
01	67	71.000	250.22	849.89	145.62	86.61	156.87	47.30	163.95
02	67	74.750	263.44	839.37	143.81	86.78	157.18	47.56	164.85
03	67	65.750	231.72	865.98	148.37	90.20	163.38	49.52	171.65
04	67	71.000	250.22	897.05	153.70	94.01	170.28	51.54	178.65
05	67	79.500	280.18	852.56	146.07	89.08	161.35	49.17	170.43
06	67	80.750	284.58	860.26	147.39	90.64	164.17	50.27	174.25
07	67	83.500	294.27	904.24	154.93	94.75	171.62	52.65	182.50
08	67	78.000	274.89	901.29	154.42	93.64	169.61	52.07	180.49
09	67	78.000	274.89	926.66	158.77	96.71	175.17	53.71	186.17
10	67	77.500	273.13	879.74	150.73	93.90	170.08	52.13	180.69
11	67	92.500	325.99	875.81	150.06	94.00	170.26	52.26	181.14
12	67	111.000	391.19	905.11	155.08	96.47	174.73	53.83	186.59
01	68	126.750	446.70	855.47	146.57	92.24	167.07	51.66	179.06
02	68	149.250	525.99	840.50	144.01	89.36	161.85	49.77	172.51
03	68	125.500	442.29	840.67	144.04	90.20	163.38	50.05	173.48
04	68	128.000	451.10	912.22	156.30	97.59	176.76	54.49	188.87
05	68	136.250	480.18	899.00	154.03	98.68	178.74	55.50	192.37
06	68	138.000	486.34	897.80	153.83	99.58	180.37	56.08	194.38
07	68	118.500	417.62	883.00	151.29	97.74	177.03	54.78	189.88
08	68	119.250	420.26	896.01	153.52	98.86	179.06	55.44	192.17
09	68	120.750	425.55	935.79	160.33	102.67	185.96	57.70	200.00
10	68	113.000	398.24	952.39	163.18	103.41	187.30	58.17	201.56
11	68	119.750	422.03	985.08	168.78	108.37	196.29	61.27	212.37
12	68	121.750	429.07	943.75	161.70	103.86	188.12	58.90	204.16
01	69	119.750	422.03	946.05	162.09	103.01	186.58	58.38	202.36
02	69	126.500	445.81	905.21	155.09	98.13	177.74	55.19	191.30
03	69	121.250	427.31	935.48	160.28	101.51	183.86	56.85	197.05
04	69	119.500	421.15	950.18	162.80	103.69	187.81	57.99	201.01
05	69	106.000	373.57	937.56	160.64	103.46	187.39	57.87	200.59
06	69	99.750	351.54	873.19	149.61	97.71	176.98	54.13	187.63
07	69	79.500	280.18	815.47	139.72	91.83	166.33	50.64	175.53
08	69	83.500	294.27	836.72	143.36	95.51	172.99	52.94	183.50
09	69	88.000	310.13	813.09	139.31	93.12	168.67	51.69	179.17
10	69	82.000	288.99	855.99	146.66	97.24	176.13	54.45	188.73
11	69	76.000	267.84	812.30	139.18	93.81	169.91	52.49	181.94
12	69	55.000	193.83	800.36	137.13	92.06	166.75	51.53	178.61
01	70	59.750	210.57	744.06	127.48	85.02	153.99	47.54	164.78
02	70	66.250	233.48	777.59	133.23	89.50	162.11	50.10	173.66
03	70	82.750	291.63	785.57	134.60	89.63	162.34	49.87	172.86
04	70	77.000	271.37	736.07	126.11	81.52	147.65	44.82	155.36
05	70	75.000	264.32	700.44	120.01	76.55	138.65	41.78	144.82
06	70	86.500	304.85	683.53	117.11	72.72	131.72	39.58	137.19
07	70	82.250	289.87	734.12	125.78	78.05	141.37	42.43	147.07
08	70	88.750	312.78	764.58	131.00	81.52	147.65	44.32	153.62

Month	Year	ASA, Ltd.	ASA, Ltd. Normalized	DJIA	DJIA Normalized	S & P 500 Composite	S & P 500 Normalized	NYSE Composite	NYSE Normalized
09	70	84.500	297.80	760.68	130.33	84.21	152.53	46.14	159.93
10	70	89.500	315.42	755.61	129.46	83.25	150.79	45.28	156.95
11	70	87.500	308.37	794.09	136.06	87.20	157.94	47.41	164.33
12	70	87.500	308.37	838.92	143.74	92.15	166.91	50.23	174.11
01	71	87.000	306.61	868.50	148.80	95.88	173.66	52.64	182.46
02	71	96.500	340.09	878.83	150.57	96.75	175.24	53.19	184.37
03	71	101.500	357.71	904.37	154.95	100.31	181.69	55.44	192.17
04	71	102.000	359.47	941.75	161.36	103.95	188.28	57.27	198.51
05	71	92.000	324.23	907.81	155.54	99.63	180.46	54.92	190.36
06	71	87.750	309.25	891.14	152.68	99.70	180.58	55.09	190.95
07	71	95.500	336.56	858.43	147.08	95.58	173.12	52.81	183.05
08	71	87.500	308.37	898.07	153.87	99.03	179.37	54.74	189.74
09	71	87.250	307.49	887.19	152.01	98.34	178.12	54.33	188.32
10	71	67.000	236.12	839.00	143.75	94.23	170.68	52.07	180.49
11	71	76.250	268.72	831.34	142.44	93.99	170.24	51.84	179.69
12	71	68.000	239.65	890.20	152.52	102.09	184.91	56.43	195.60
01	72	92.750	326.87	902.17	154.57	104.68	189.60	57.71	200.03
02	72	92.750	326.87	928.13	159.02	107.35	194.44	59.24	205.34
03	72	91.500	322.47	940.70	161.18	107.20	194.17	59.68	206.86
04	72	93.500	329.52	954.17	163.48	107.67	195.02	60.00	207.97
05	72	104.000	366.52	960.72	164.61	109.35	198.06	60.76	210.61
06	72	109.500	385.90	929.03	159.18	107.14	194.06	59.31	205.58
07	72	112.000	394.71	924.74	158.44	107.39	194.51	59.09	204.82
08	72	96.750	340.97	963.73	165.12	111.23	201.47	61.11	211.82
09	72	93.500	329.52	953.27	163.33	110.55	200.24	60.60	210.05
10	72	89.000	313.66	955.52	163.71	111.58	202.10	61.12	211.85
11	72	87.500	308.37	1018.21	174.46	116.67	211.32	63.88	221.42
12	72	91.250	321.59	1020.02	174.77	119.10	215.72	64.48	223.50
01	73	101.500	357.71	999.02	171.17	116.03	210.16	62.75	217.50
02	73	106.250	374.45	955.07	163.64	111.68	202.28	60.00	207.97
03	73	118.500	417.62	951.01	162.94	111.52	201.99	59.85	207.45
04	73	144.500	509.25	921.43	157.87	106.97	193.75	56.73	196.64
05	73	165.000	581.50	901.41	154.44	104.95	190.09	55.42	192.10
06	73	190.000	669.60	891.41	152.73	104.26	188.84	54.84	190.09
07	73	193.000	680.18	926.40	158.73	108.25	196.07	57.65	199.83
08	73	178.000	627.31	887.57	152.07	104.25	188.82	55.64	192.86
09	73	164.000	577.97	947.10	162.27	108.43	196.40	58.51	202.81
10	73	190.000	669.60	956.58	163.90	108.29	196.14	58.28	202.01

APPENDIX D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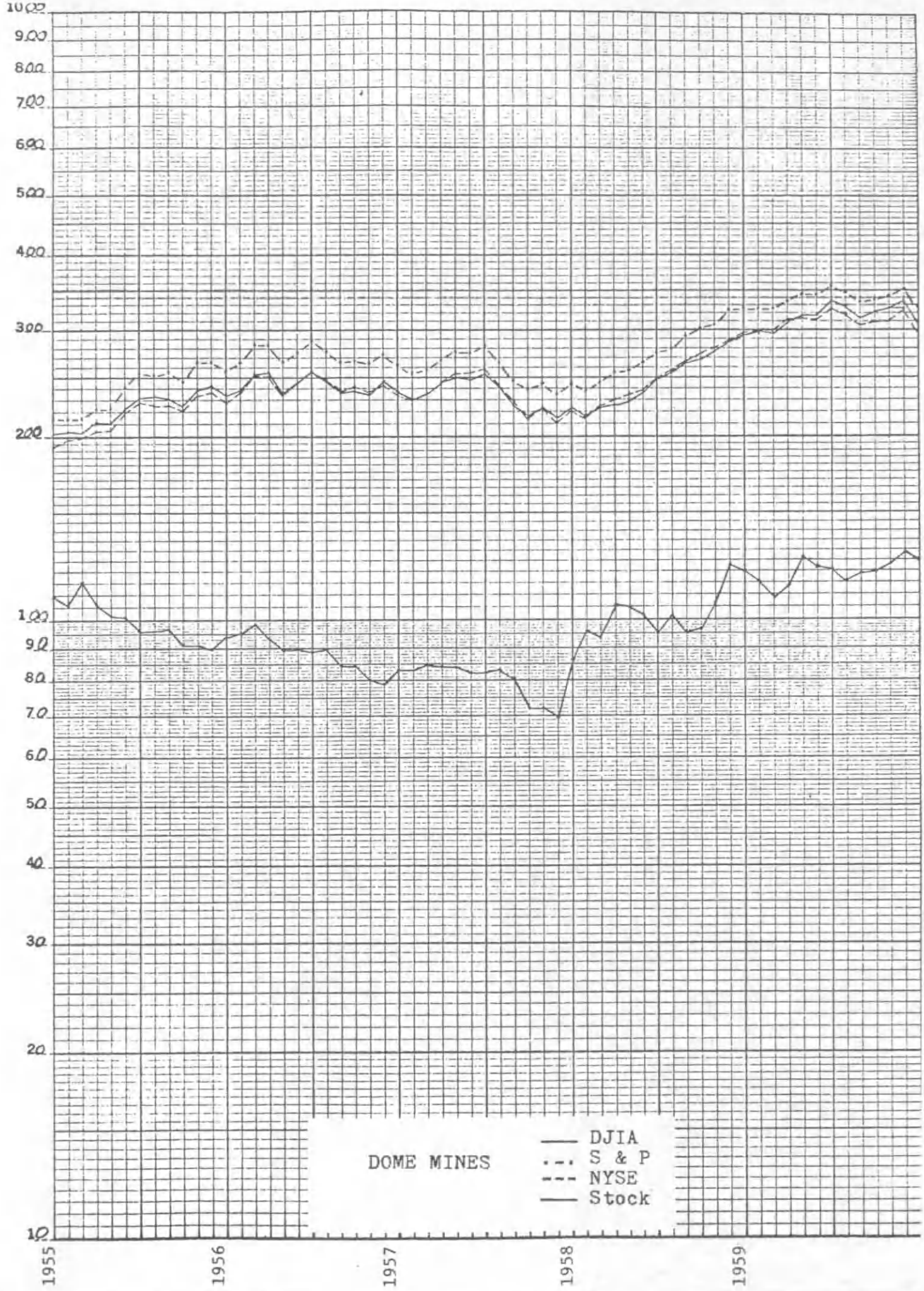
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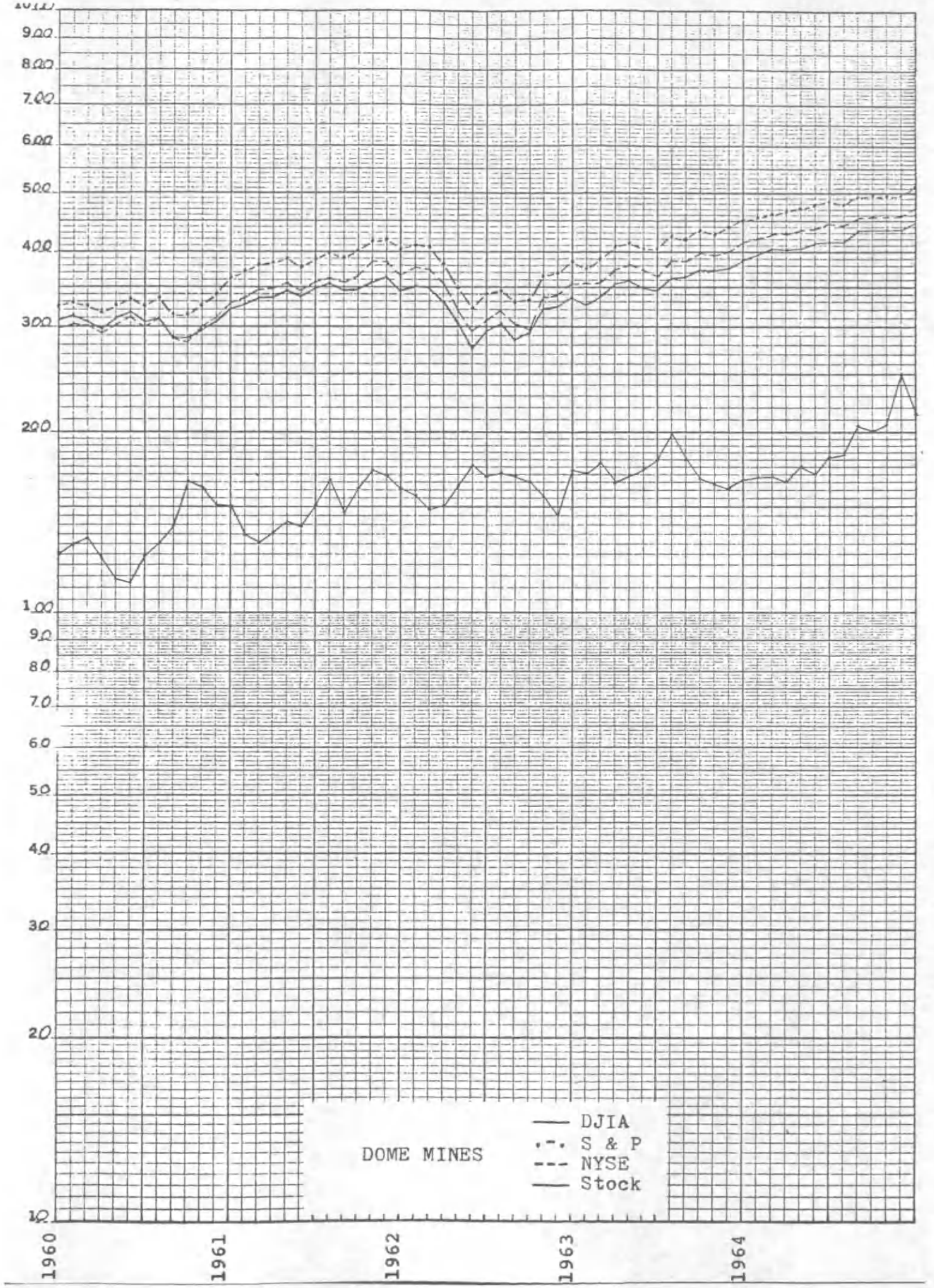
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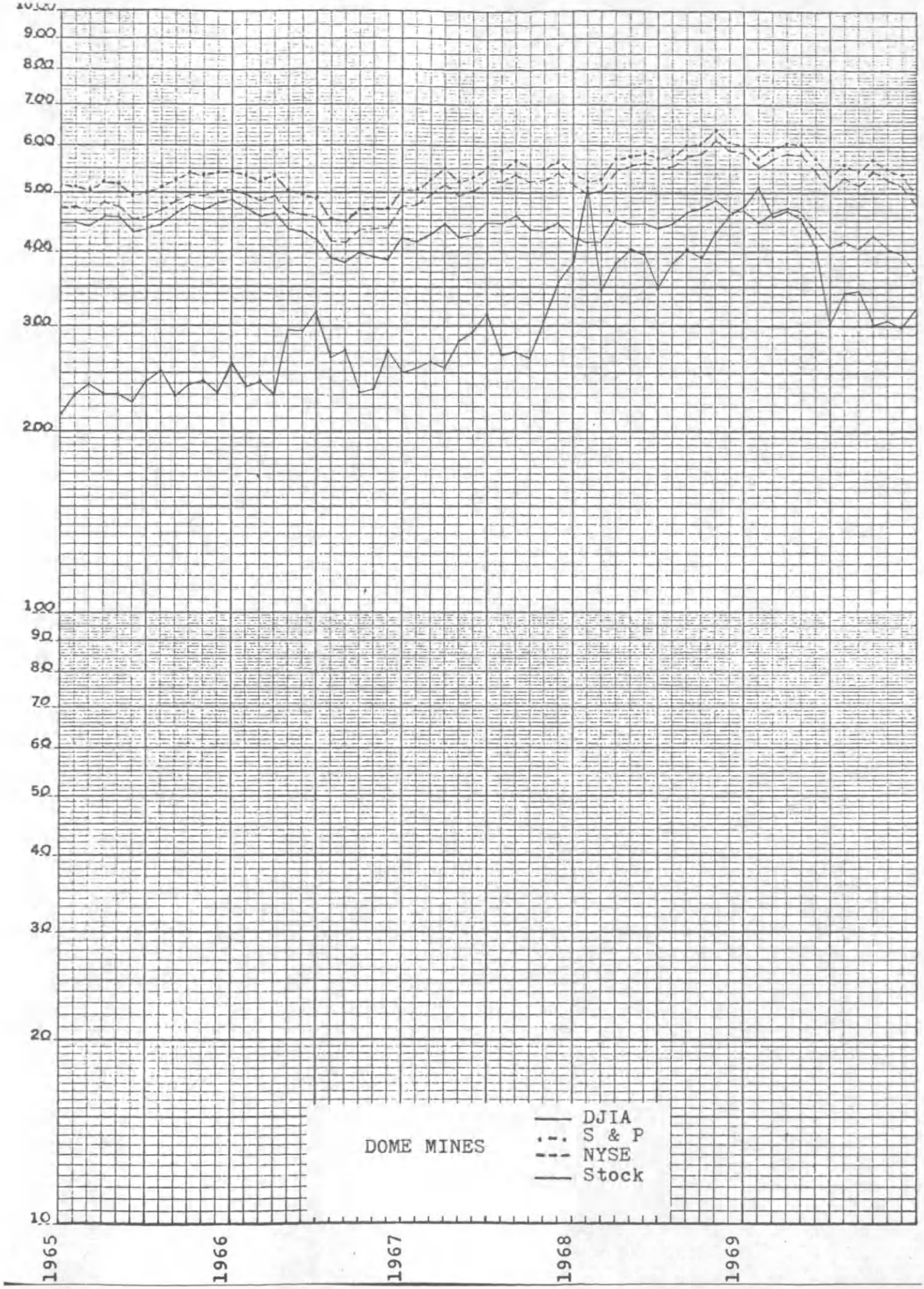
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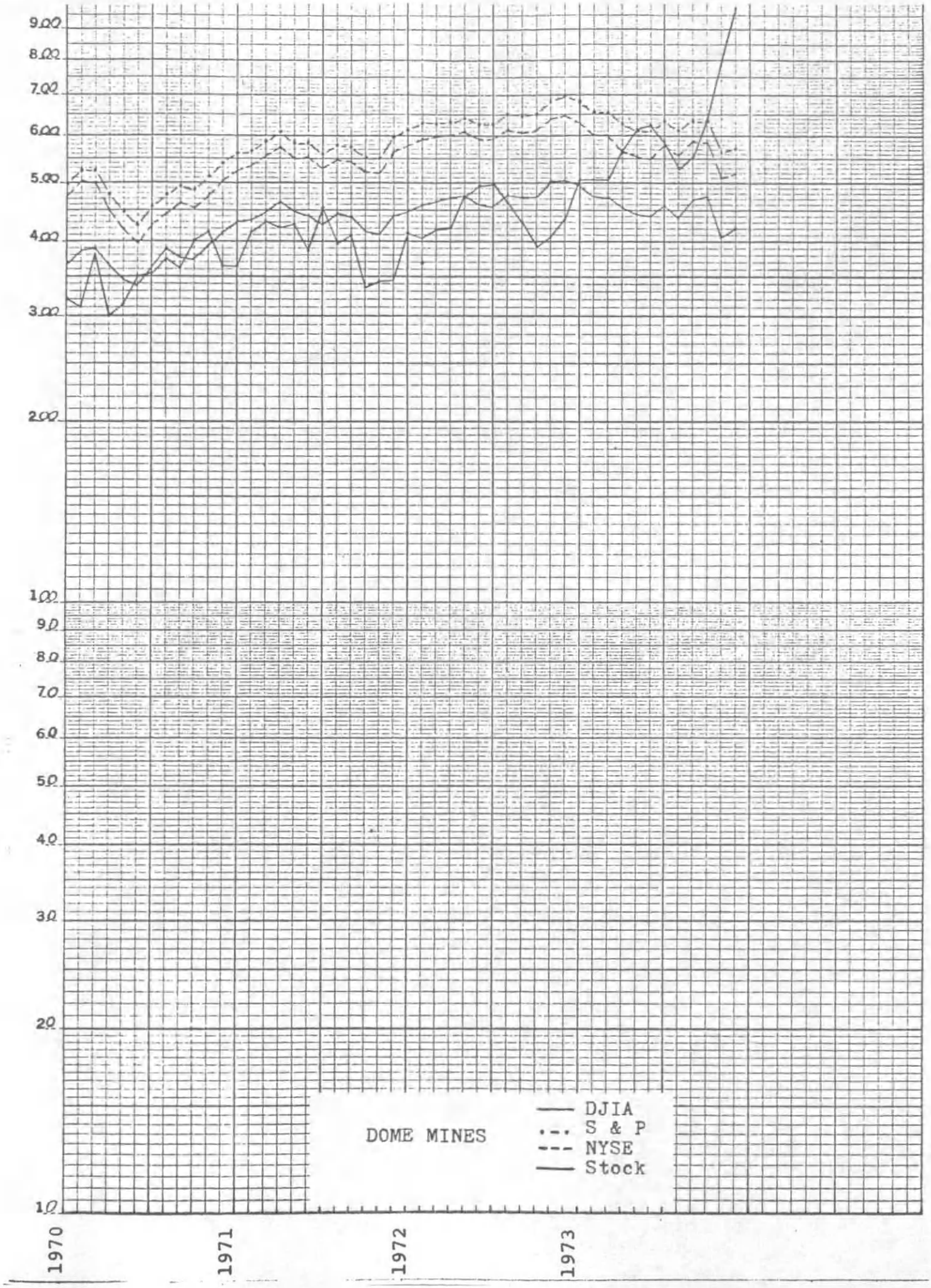
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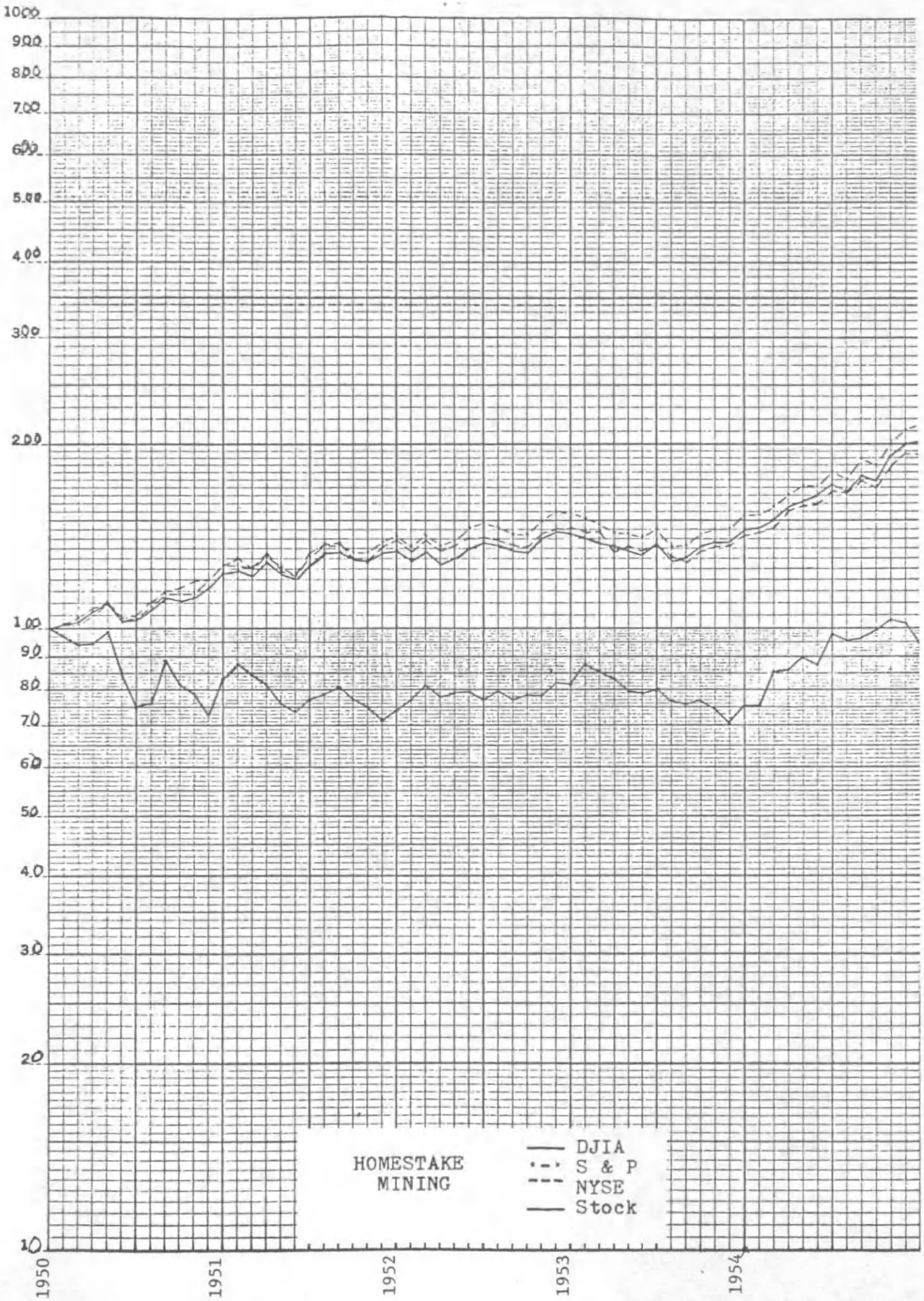
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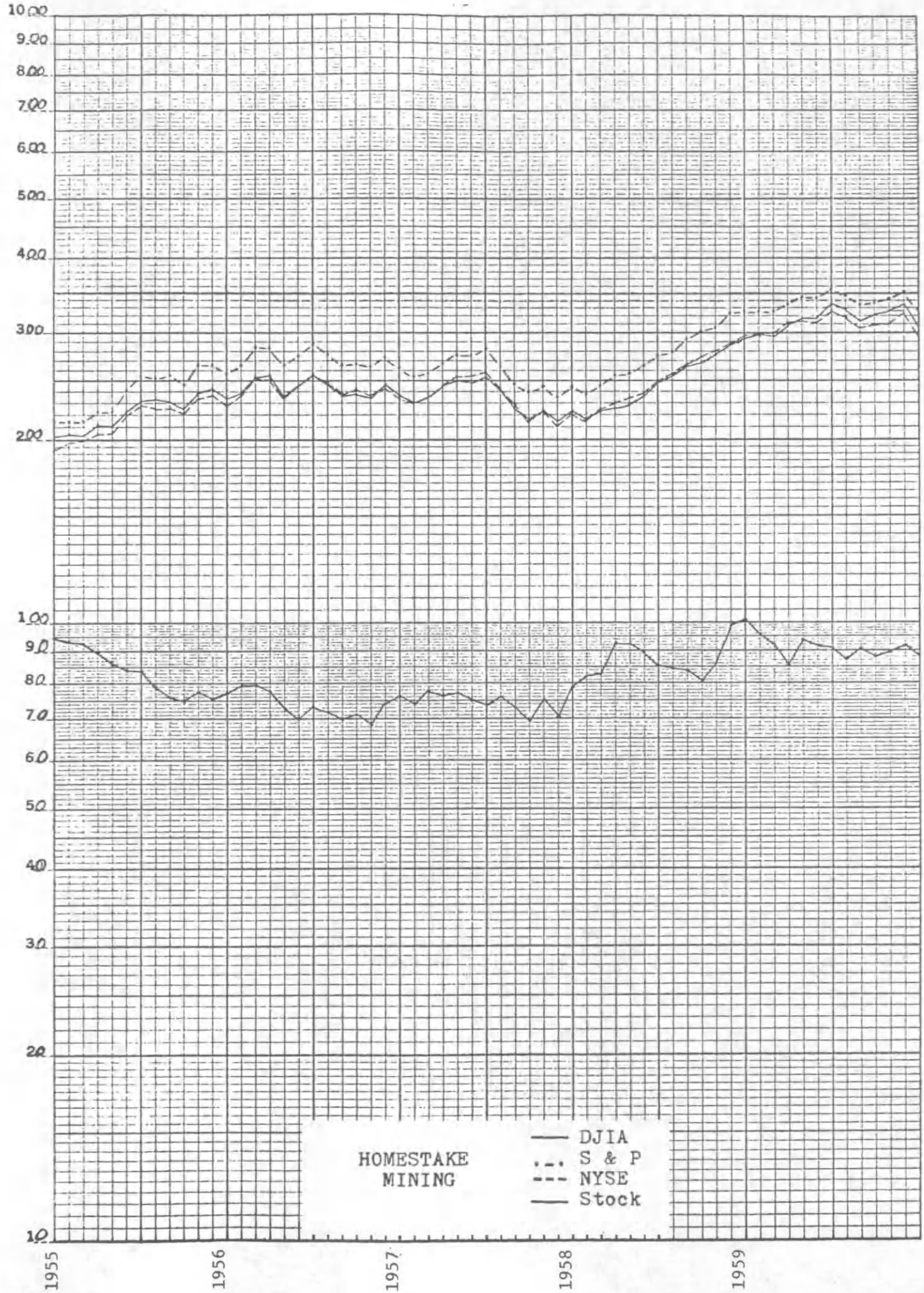
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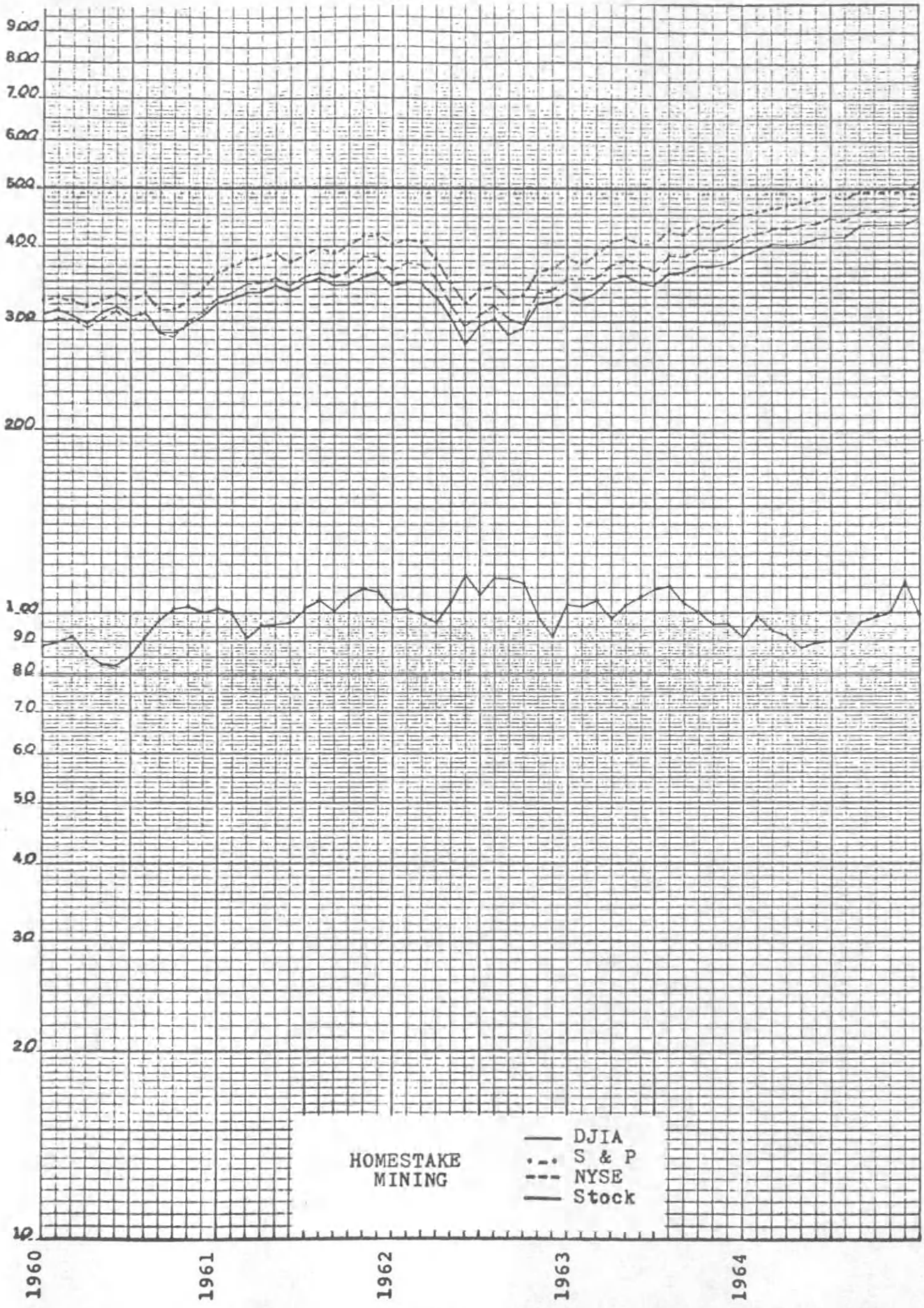
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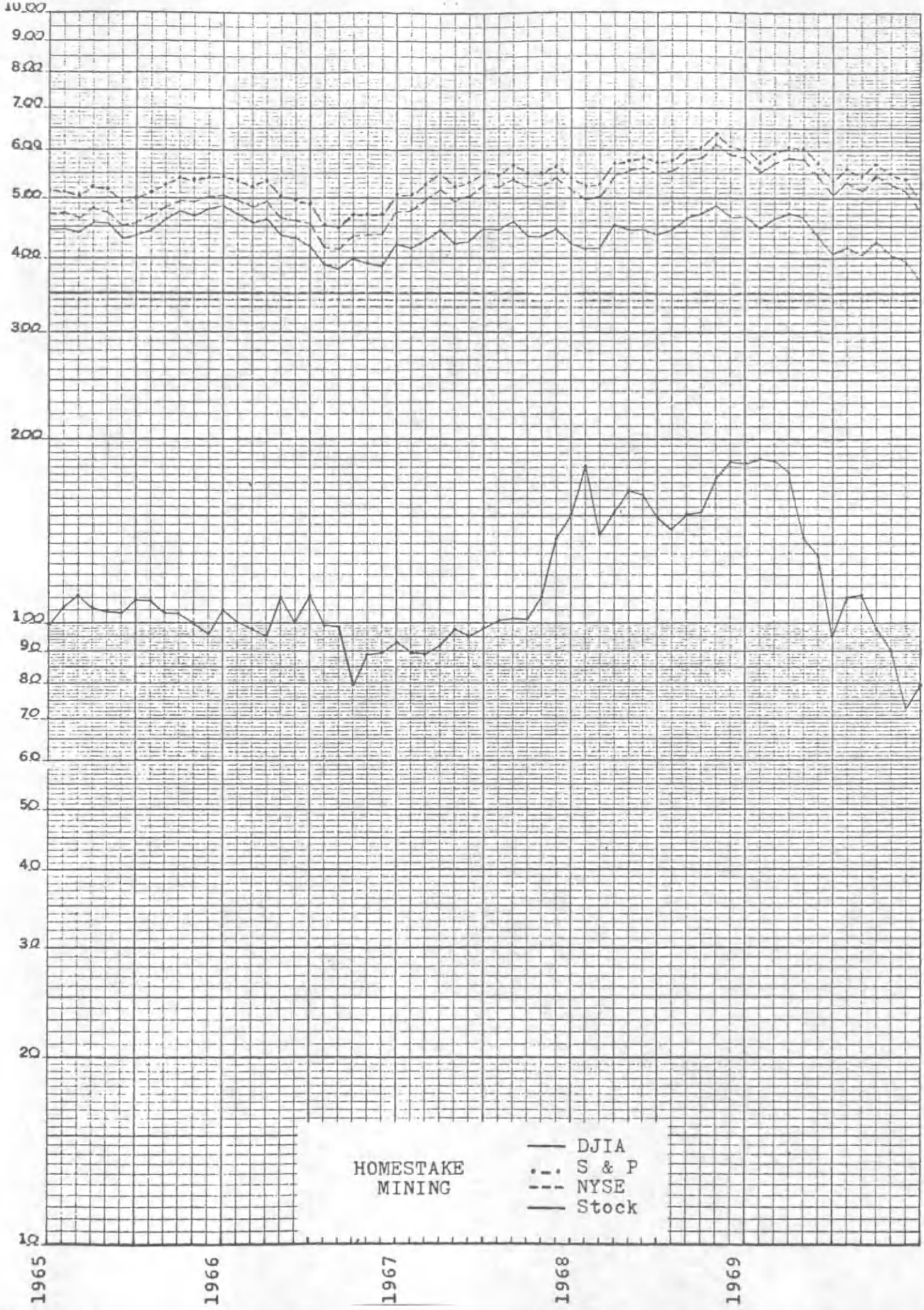
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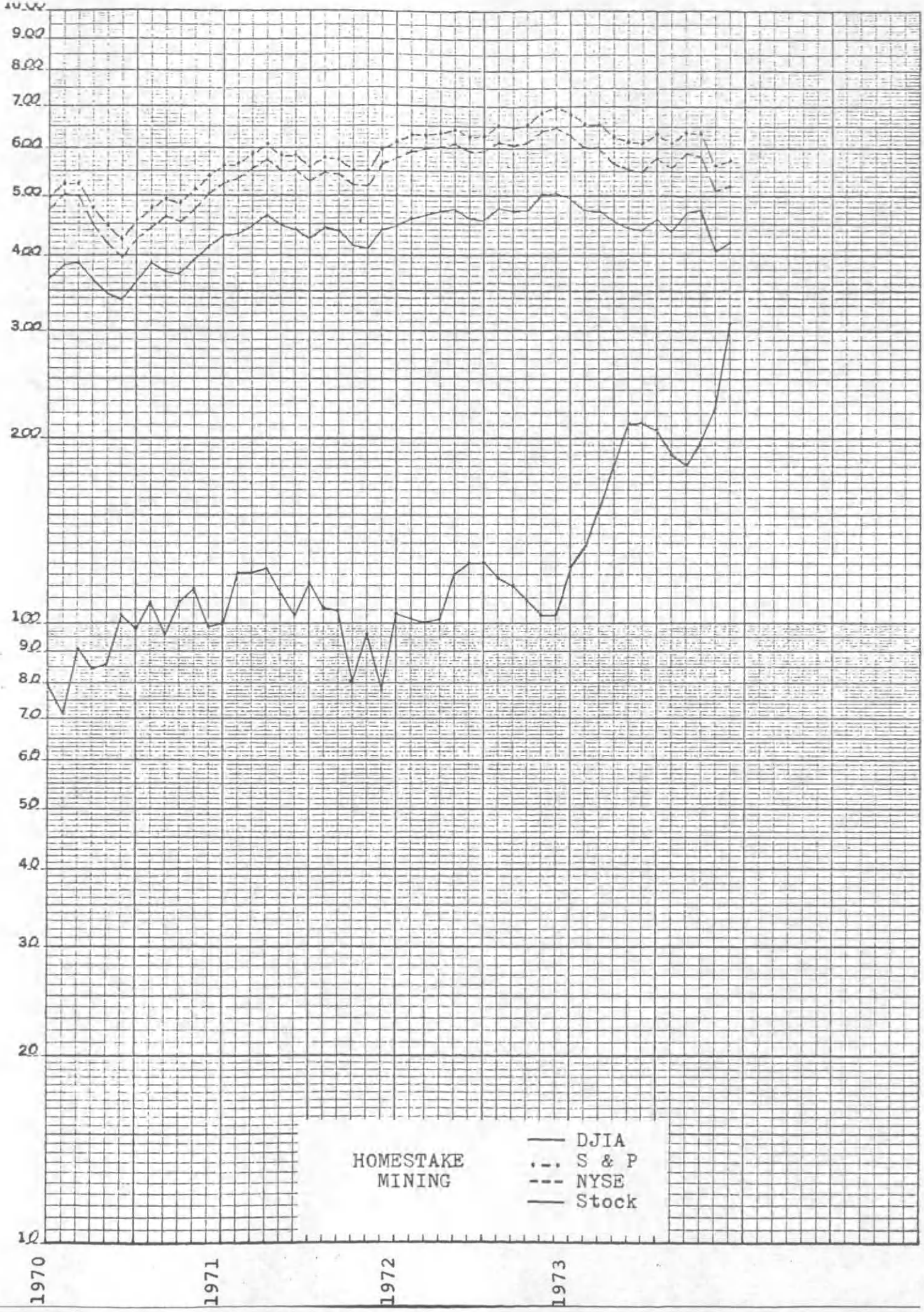
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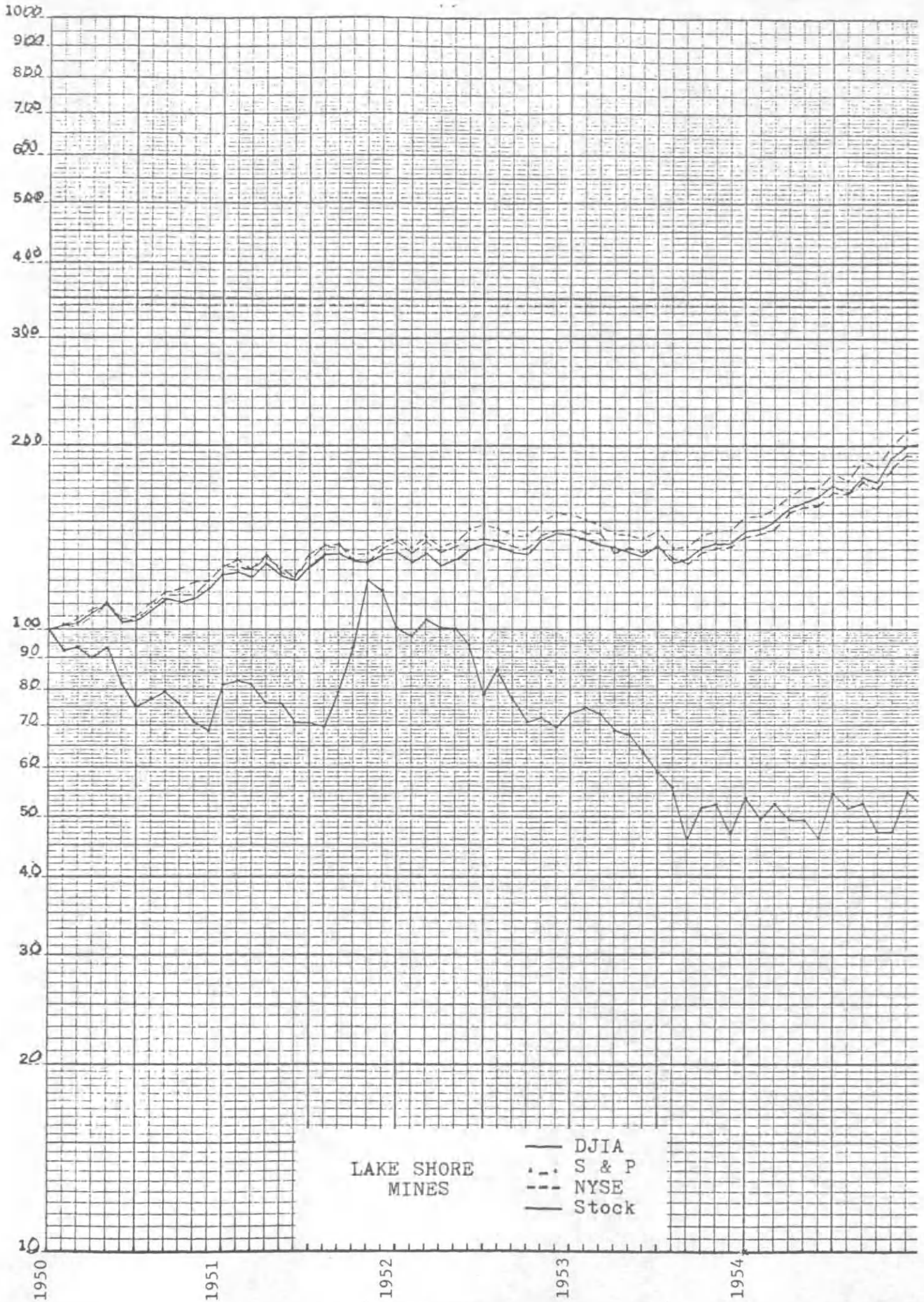
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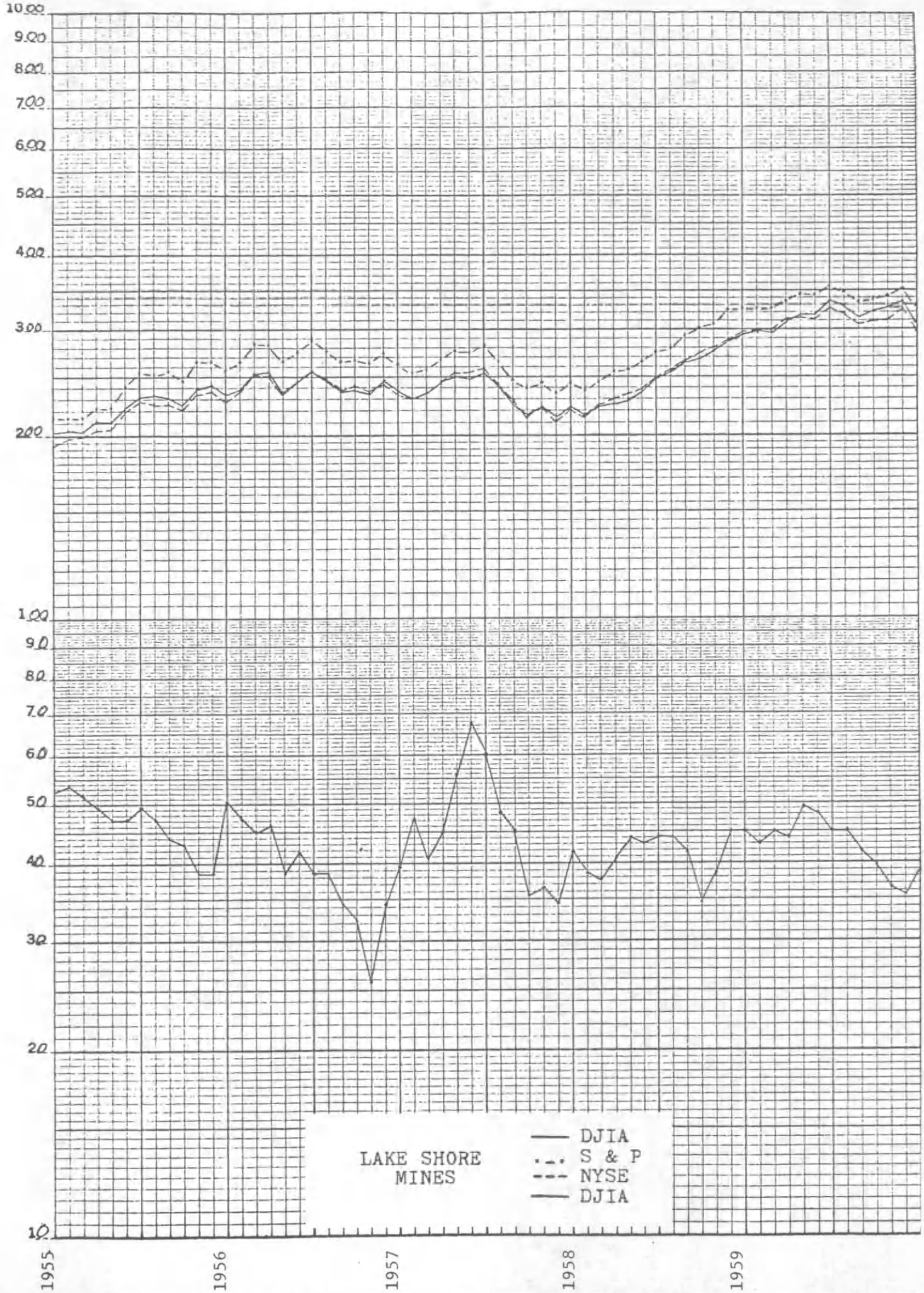
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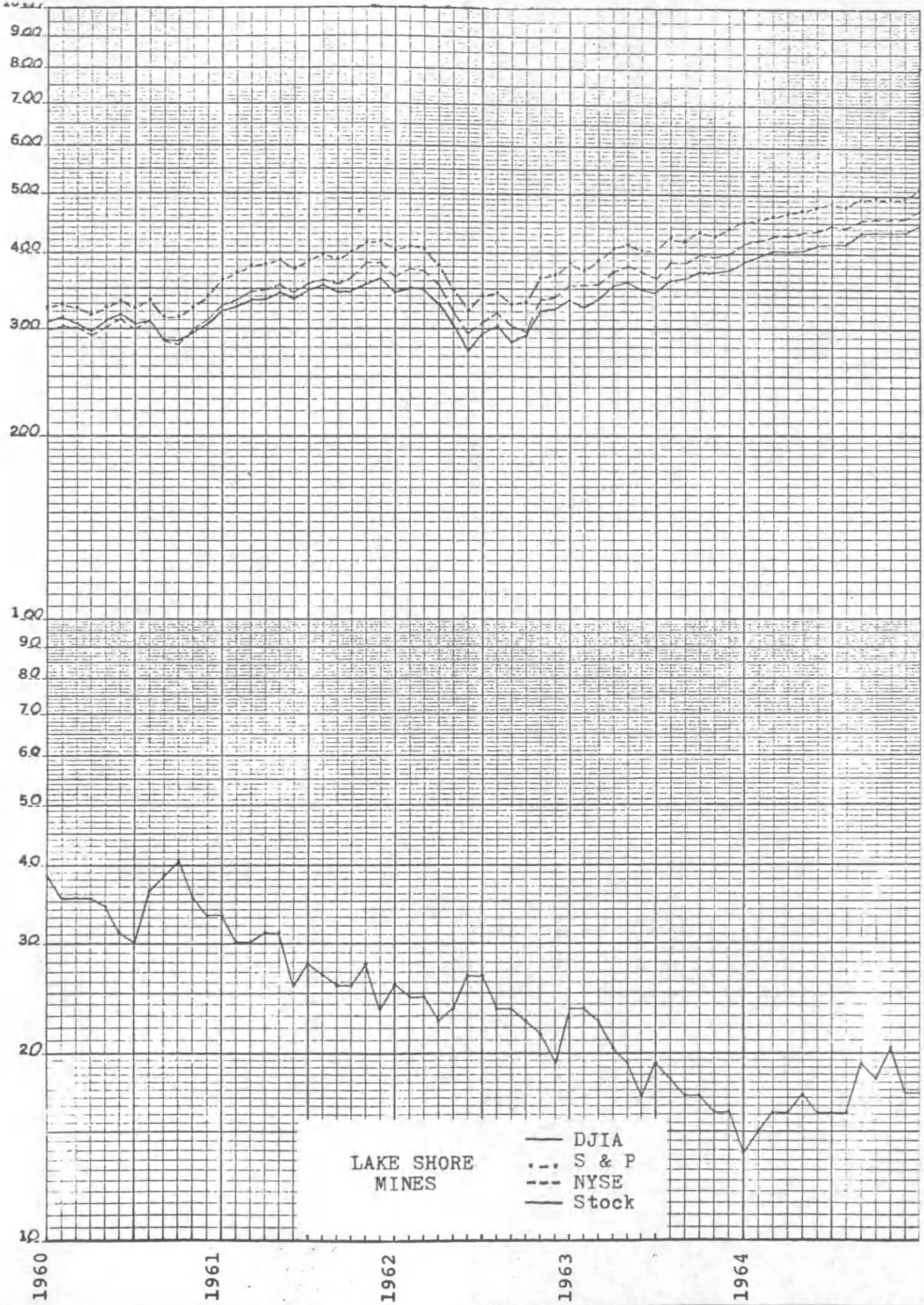
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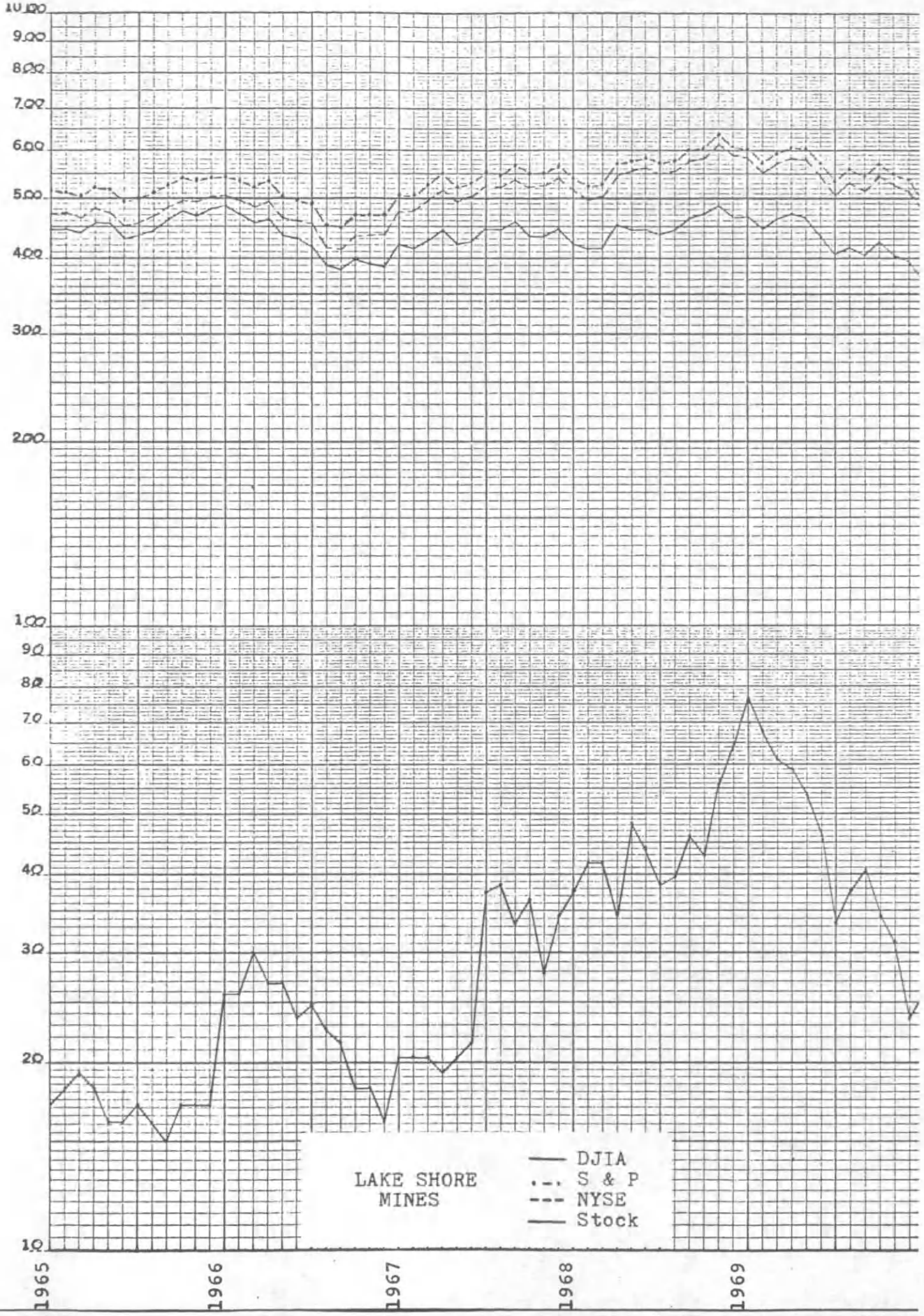
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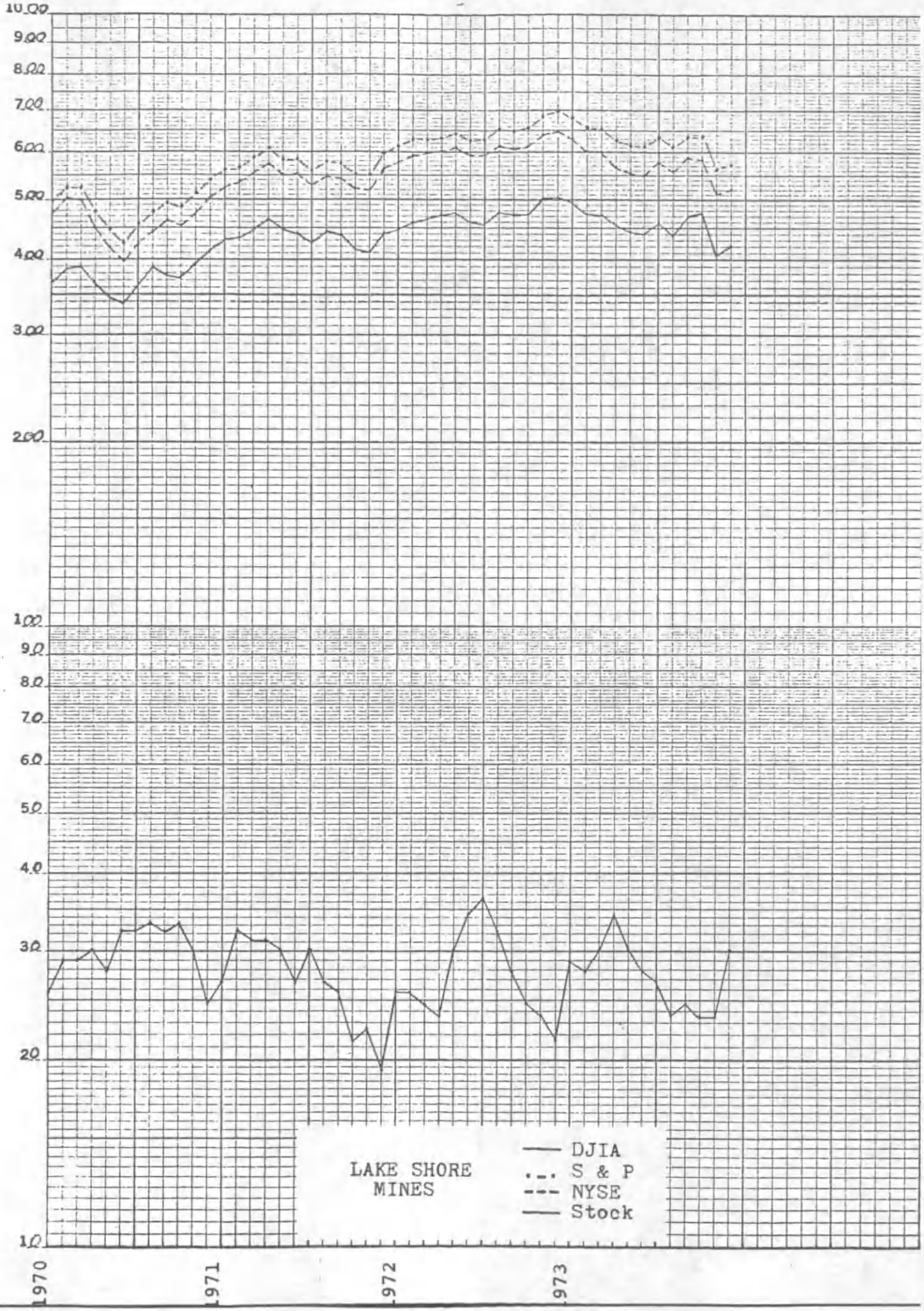
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LAKE SHORE MINES
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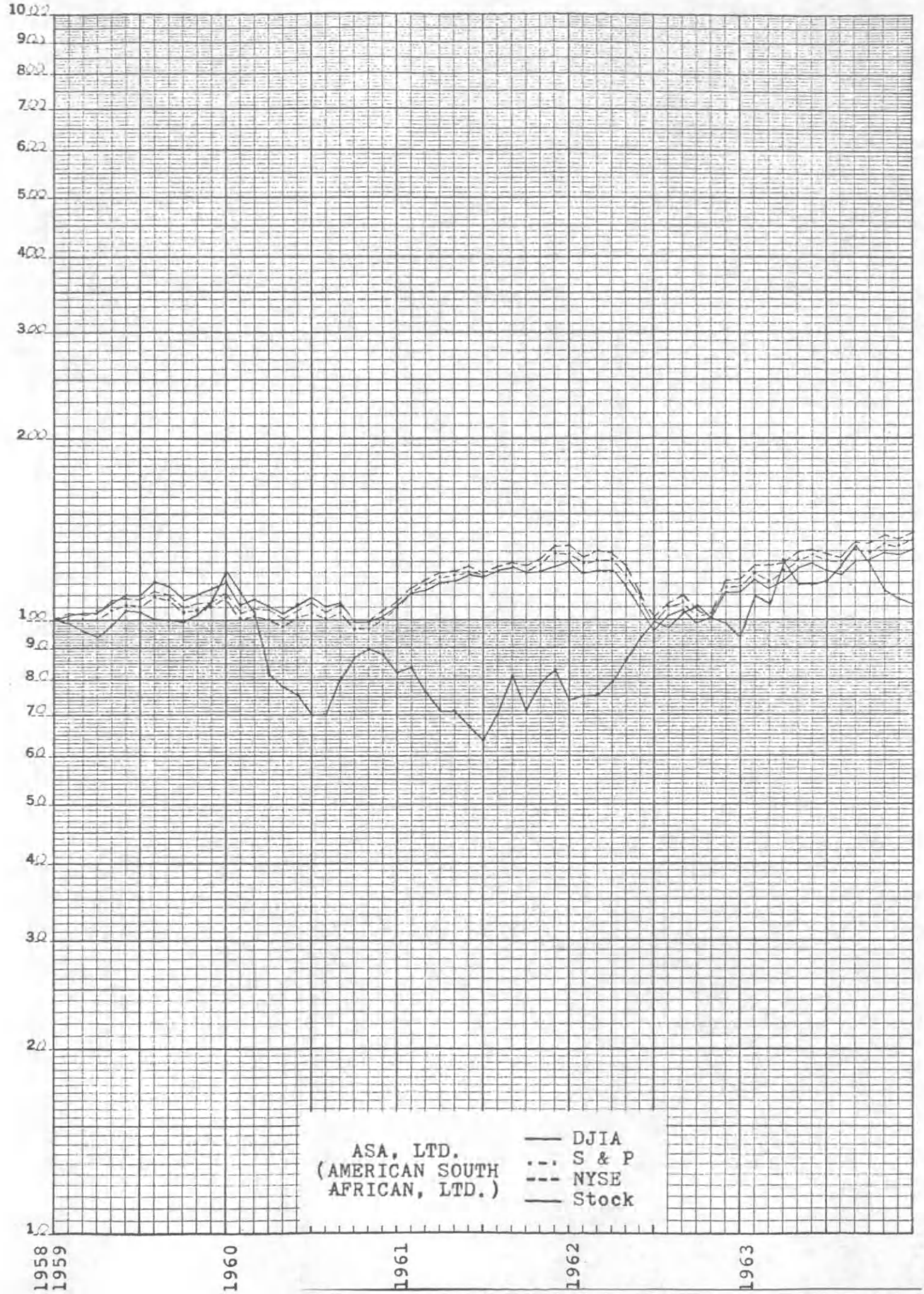
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(AMERICAN SOUTH AFRICAN, LTD.)
DJIA
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NYSE
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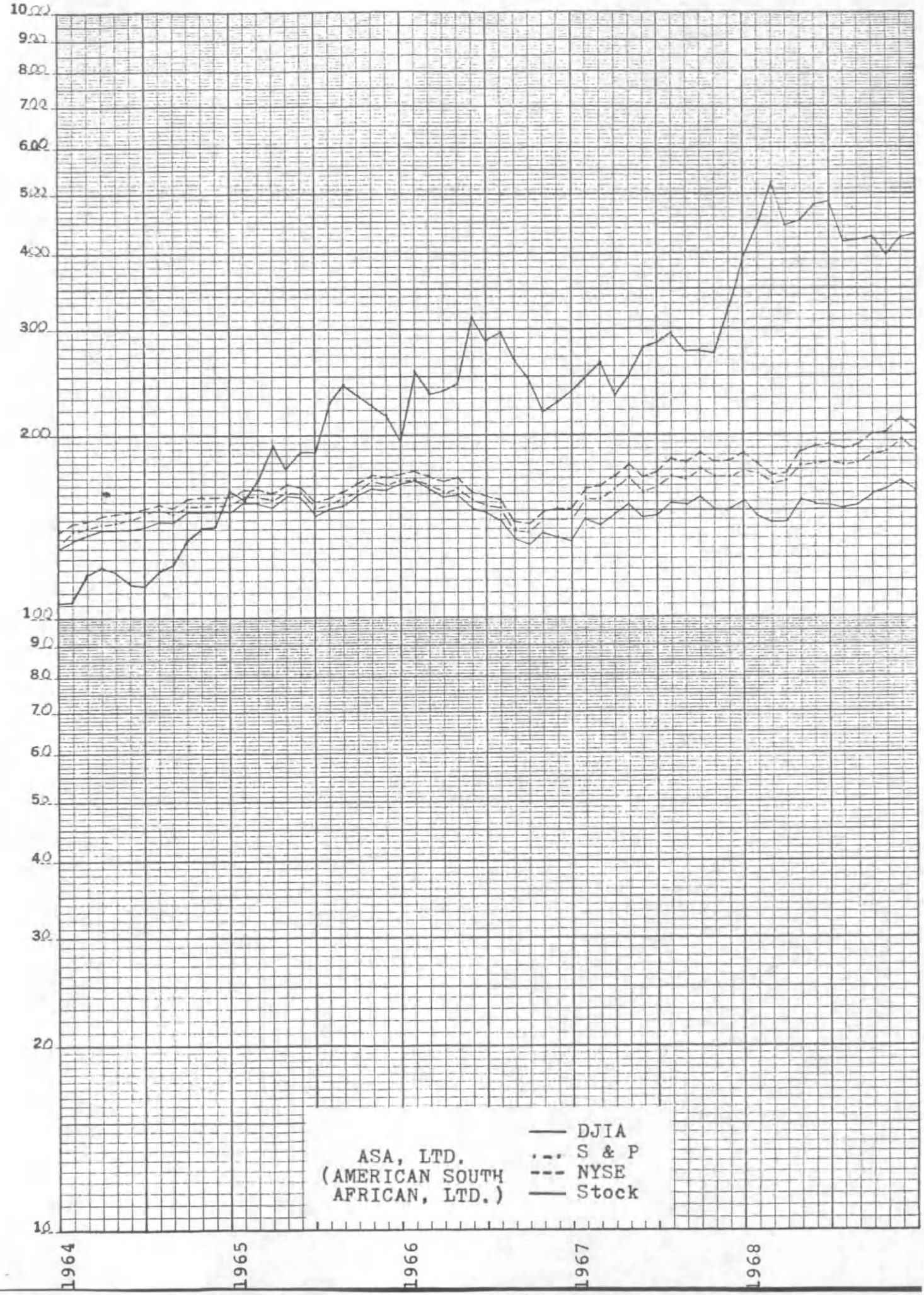
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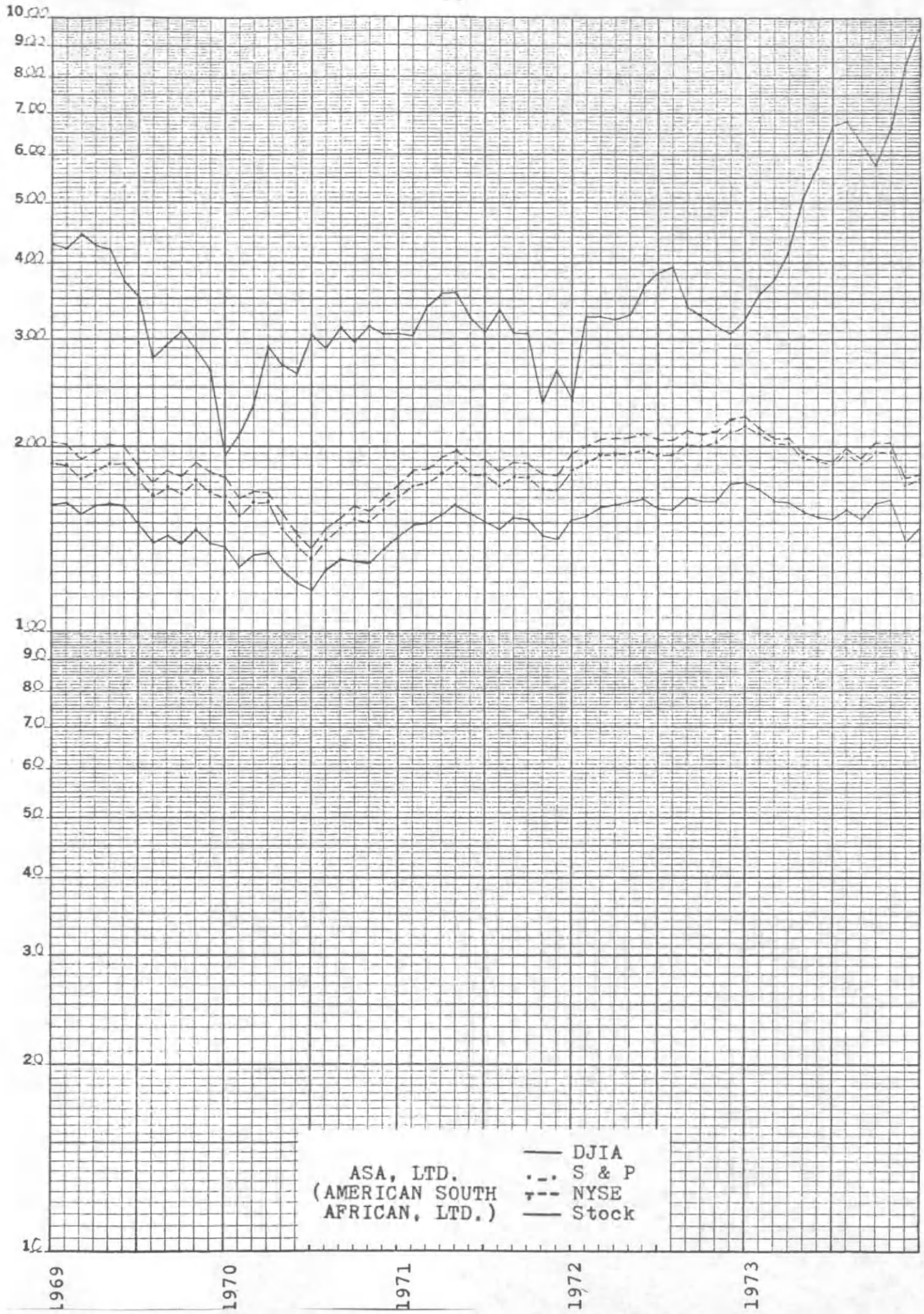
1968
ASA, LTD.
(AMERICAN SOUTH
AFRICAN, LTD.)
DJIA
S & P
NYSE
Stock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ASA, LTD.
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AFRICAN, LTD.)
DJIA
S & P
NYSE
Stock
1969
1970
1971
1972
1973

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